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THE NINETEENTH YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

PART I

NEW MATERIALS OF INSTRUCTION

COMPILED BY THE SOCIETY'S COMMITTEE
ON NEW MATERIALS OF INSTRUCTION

THIS YEARBOOK WILL BE DISCUSSED AT THE CLEVELAND
MEETING OF THE NATIONAL SOCIETY, MONDAY,
FEBRUARY 23, 1920, 8:00 P. M.

PUBLIC SCHOOL PUBLISHING COMPANY
BLOOMINGTON, ILLINOIS
1920

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NEW MATERIALS OF INSTRUCTION

PREPARED BY THE SOCIETY'S COMMITTEE ON NEW MATERIALS OF INSTRUCTION

FROM MATERIAL SUBMITTED BY

REPRESENTATIVES OF THE SCHOOL SYSTEMS OF BALTIMORE COUNTY, MD.; BAY CITY, MICH.; BOWLING GREEN, OHIO; CINCINNATI, OHIO; JANESVILLE, WIS.; LAKEWOOD, OHIO; LAWRENCE, MASS.; LOUISVILLE, KY.; OMAHA, NEB.; ST. LOUIS, MO.; SAN ANTONIO, TEXAS; SPRINGFIELD, ILL.; SUPERIOR, WIS.; AND OF THE STATE NORMAL SCHOOL, OSHKOSH, WIS.; THE STATE UNIVERSITY OF IOWA, AND THE UNIVERSITY OF CHICAGO.

Edited by Guy Montrose Whipple

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TABLE OF CONTENTS

INTRODUCTION AND REPORT OF THE COMMITTEE

Teachers very seldom think of it as part of their duty to find and prepare for use in class work new materials for instruction. They are for the most part mere distributors of the knowledge which they themselves were taught in school or of such knowledge as they can easily find in standard textbooks.

Indeed, it is possible to find cases in which a teacher limits the work of pupils to a study of what is contained in a single text. Even the order of presentation of topics and the method of presenting material sometimes follow strictly the suggestions of the textbook so that the teacher becomes a mere imitation.

When a teacher rises above the lower level of mere imitation it is seldom that he or she does more than to use several texts, making up a kind of eclectic course composed of those selections from the different texts which seem to be best adapted to the particular class in hand.

Since new ideas, such, for example, as discoveries in science, cannot be incorporated into textbooks until they are several years old, the dependent attitude of teachers tends to keep the schools far behind the world. Furthermore, the ideas which have long been used in schools attain to a kind of artificial dignity which makes it difficult to convince many teachers that new materials are important enough to be placed on the same level as the teachings which have been current.

For example, history has so long emphasized military campaigns and the doings of political leaders that it is almost impossible to get into the schools the history of industries, in spite of the fact that this vital aspect of the subject would be much more useful and quite as educative as the traditional type.

The statements which have just been made can be put into even more emphatic form. The whole system of training and certificating teachers has tended to make both the teachers and the public complacent with a situation which is in reality dangerously stagnant. A

candidate for admission to the teaching profession, if he or she goes to a training school, is often given instruction which is intended to determine the whole later professional practice of that individual. He is told that certain texts are superior. He is given detailed instruction in methods of using certain specific materials. When later he enters upon his active career he is not called upon by the superintendent or by public opinion to go outside the range of the material which he covered while he was himself a student.

What has been said should not be misunderstood as a plea for a universal overturning of traditional materials and methods. The fundamental processes of arithmetic are beyond doubt established as a necessary part of the school curriculum and so are also such items as the cardinal points in geography and other common branches. There are doubtless grounds also for continuation of many of the methods of presentation now used in the schools. The criticisms which have been expressed in the foregoing paragraphs are not against the use of textbooks, but against the absolute adherence to texts which is often to be found in American schools.

Furthermore, the system which prevails in this country of preparing textbooks is distinctly unstimulating to the average teacher. Textbooks are very often prepared by specialists who live apart from the schools in which their books are used. The professor in a university who devotes himself to research brings out a book to be used in the high school. This specialist is relied upon to furnish the new material which his research affords. Sometimes he takes into partnership a high-school teacher, but usually with the understanding that the teacher is merely to offer minor suggestions about the arrangement of the material and to tone down its language to the level of the pupils. Such a system of making textbooks, whatever its advantages, certainly does not lead teachers to regard it as a part of their daily tasks to prepare new materials for use in their classrooms.

The system of publication of textbooks is also remote from the classroom teacher. The publisher is not a part of the official organization of the school. He is governed only by his devotion to things intellectual or, more frequently, by competition and restrictive legislation, which latter many states have in recent years passed in the effort to prevent real or imagined abuses of the book trade. The commercial

publisher is cautious and unlikely to lead educational practice. It is usually much safer for him to follow in well beaten paths. He accordingly contributes a new factor of conservatism to the situation. This is especially true where he comes into possession of an unusually successful and dominant book. The tendency in such cases is to resist to the utmost change of all forms.

The public machinery which has been set up in two of the states of the United States for the production of textbooks has emphasized the printing of the books more than the collection through publicly constituted agencies of intellectual material. The states of California and Kansas are trying the experiment of public printing of texts. They are dependent, however, for the material which they use on individual initiative quite as much as is the commercial publisher.

The experience of the Canadian provinces in going further than have those of the states in this country which have taken up the printing of texts is hardly reassuring. In Canada books were prepared in various lines by selected commissions working under the supervision of provincial departments of education. These official books were imposed by the authority of the law on all public institutions. The books are criticized by Canadian users as highly conservative in their original form, as inaccessible to revision and as removed from the effects of competition which in the United States brings a flood of new books from many publishers whenever any field of instruction is not adequately covered. It is also stated that the official textbooks being required alike in all kinds of communities cannot meet the needs of different conditions, such for example as those which obtain in urban and rural communities.

Again, it should be explicitly noted that the foregoing statements are not intended to be taken as a wholesale condemnation of textbooks and their makers. The system of textbook publishing which exists in this country has reached a level of influence and importance in determining our school practice which makes it impossible to throw it aside even when one is impressed by its faults. The situation is such, however, that it calls for careful consideration because of its enormous influence on classroom work.

During periods of social stress or rapid reorganization the conservative character of American textbook-controlled instruction becomes

strikingly apparent. Thus the demands of the war called attention in a very pointed way first to the need of new materials of instruction and second to the necessity of setting up special agencies for the creation of such materials. The country needed to carry on campaigns for food conservation and for general thrift. It was recognized at once that these campaigns required for their success new reading material and new problems for classes in arithmetic. A great many agencies have published a vast amount of material while the teachers as a body have reacted in a way which is strictly in keeping with tradition. The teachers have used the material, but for the most part they did not prepare or even rearrange it; and since the war much of the new material is again passing out of sight.

Another example of the same general type is to be found in the rate of progress of the junior-high-school movement. Here again the need of a reorganized curriculum is everywhere conceded. Even critics of the movement admit that the work of the seventh and eighth grades must be made over. The reform waits however, for the preparation of the materials of instruction. There are now new books in mathematics and the beginnings of new efforts in other lines. In the meantime many a junior high school has gone on the rocks or become an empty name because teachers were not trained in the reconstruction of the curriculum.

There are many urgent reasons why the present generation of teachers must master the new art of revising in a general cooperative way the materials of instruction. The tests which have in recent years been applied to the results of school work have made it clear that schools cannot go on in the future as they have in the past waiting for the slow operation of spasms of reform initiated by individuals. There must be an immediate response to the needs uncovered by studies of school results. If a survey shows that arithmetic is badly taught in a given school system it is a very weak move merely to try a new textbook, especially when most of the books are so much alike that it requires an elaborate analysis to mark out their differences. In an emergency of this kind it ought to be possible to set in motion a cooperative effort among the teachers concerned, which effort would progressively make the materials needed to correct the scheme of instruction.

In short, the school systems of this country have reached the stage where they must take up a new problem, that of continuously enriching and revising their materials of instruction. This new type of activity is absolutely essential if the schools are to realize on the educational investigations of all kinds which have been carried out in recent years, and if they are to succeed in the program of progressive development suggested by these investigations.

While the general situation is one of extreme conservatism, as has been pointed out in the foregoing paragraph, there is to be found in scattered centers all over the country the spirit of production. Here and there aggressive teachers have begun to recognize the necessity of new types of material and they have prepared it for their own use or for use in the system to which they belong.

This *Yearbook* was prepared by a committee of the National Society for the Study of Education as a means of studying this productive spirit and devising methods of fostering it and turning it to the uses of general educational progress. This committee, which was created in 1918 under the title Committee on Materials of Education, is the descendant of two older committees which in 1918 brought their efforts to a point where it was believed that their results could be utilized in the immediate reconstruction of elementary education. The two earlier committees were the Committee on the Measurement of Educational Products and the Committee on Economy of Time in Education. Both had rendered several reports to this Society and had fully established the conviction among school men and women that methods of measuring products should be universally applied and that reorganization of school courses should be undertaken at once in order to insure effective use of the time and energy of pupils. Both committees had made many positive recommendations. At this point the Society assigned to the present Committee the task of embodying, in concrete materials to be used in classrooms, the principles arrived at by the earlier committees.

The present Committee accepted its task with the idea that it would aim to develop not a new series of textbooks in particular subjects, but a new cooperative movement, which if it can once be set in motion will continuously produce on a broad scale new materials of instruction. This purpose may be described in general terms as fol-

lows. The Committee aims to find a way of enlisting a large number of people in all parts of the country in the task of producing new materials for classroom work. As fast as material is made it should be tested by use and its availability should be measured by the scientific methods now at hand and by new methods which are constantly being evolved. The material which is thus scientifically evaluated must be made available to a wide circle of cooperative workers. There must therefore be some constituted channel of exchange.

In execution of this task the Committee spent its time during the trying year 1918–19 bringing together certain materials on civics and related topics which had been generated by the needs of the war. It rendered a preliminary report at the meeting of 1919 and asked to be continued with permission to issue a *Yearbook*. During the year past the scope of material collected has been widened and the result is now laid before the Society in the following pages.

The materials printed have been selected from a large body of manuscripts and printed materials which have passed through the hands of the Committee. In gathering these examples of constructive work the Committee has had the cooperation of a large number of superintendents and students of education. It has not found it possible to use all that has come to hand and consequently much has been omitted which would serve to intensify the impression which the accepted material makes.

The materials now presented were of course not produced under the control of the Committee and do not represent the operation of any concerted effort. They lack therefore all of the marks of unity except those which come from the nature of the educational demand for new material. It is the belief of the Committee that acquaintance with what is now in existence is a necessary first step in the perfection of the plans which it has to recommend to the Society.

The materials published in this *Yearbook* are accordingly to be described as the miscellaneous outgrowths of natural educational demands. Furthermore, these materials have for the most part not been tested as to the results which they produce. The material is then frankly in most cases in its raw state. The Committee would be

unwilling to treat this *Yearbook* as in any sense a report on a final stage of the undertaking which it has to recommend to the Society. The *Yearbook* is intended to exhibit in a concrete way the fact that there is in the country creative energy which is operating unsystematically, without cooperation in many cases, and often without rigid criticism, to produce the materials of instruction which are essential to educational progress.

Before coming to a presentation of the full plan of further work which this Committee recommends to the Society, it may be well to record the experience through which the Committee has passed in collecting that which is now presented.

A great deal of outline material was sent in response to the Committee's call. These outlines were in some cases evidently intended to indicate to teachers topics which they were expected to emphasize and on which they would easily find information in common textbooks. Such outlines are official guides but not products of any original constructive effort. Sometimes these outlines represented a most elaborate endeavor on the part of a supervisor to guide class work. We have on hand outlines giving detailed directions for each day in the year in which the references are to a single text or to a very limited series of texts.

A second type of outline found in the collection submitted was that in which original suggestions were freely incorporated but the teacher was left to find the material as best he or she could. These represent, doubtless, the hopes of some highly imaginative, but completely occupied educator who can think of matters on which it might be well for someone to have ideas but on which at the moment no ideas exist in usable form. The educational world seems in view of the number of outlines of this type, to be superlatively optimistic and shockingly complacent in falling short of ideals which it sets for others.

A third type of outline may be described as a productive and original assembling of references not easily accessible in ordinary texts. The Committee accepted for publication one elaborate example of this kind of outline which was supplied by Professor Horn and his co-workers. In general, it omitted examples of this type of work because there is a long step between the collection of references and the formulation of the material found in these references so that it will be presentable to pupils.

A very large part of the work which has to be done in coming years consists in formulating lessons, that is, in putting material into detailed form. Especially is this true in view of the current effort to carry down into the lower schools material which was formerly reserved for the more mature students of the high school. If algebra and geometry are to be used in the seventh and eighth grades, they must be worked over by skilled hands. Mere exhortations to teachers that they use the materials of higher science and literature will not accomplish what is sought.

With the various kinds of outlines, came descriptions of experiments in new forms of class teaching. A description is a kind of skeleton of the living thing. The teacher who conducts a class fills the period in reality with much class action and discussion. The pupils talk and listen and the atmosphere is full of new and often very vital information. The description omits most of this and is, in contrast with the class exercise, very meager. The absence of a full report of such an exercise is often a great loss. The give and take of ideas frequently creates pedagogical material which is invaluable, but in the absence of a reporter it is in ephemeral form and fails to serve the many purposes which it might serve.

There is another type of description which is equally meager as contrasted with the class exercise. That is the description which tells briefly of a method but does not work out in full the effects of the method on the material. For example, one writer states that after the problem was presented "the pupils rather than the teacher reported what had been observed." Either what the pupils said was good, or it was not. Either it was more productive than listening to a teacher or reading out of a book, or it was not. The record is lost now and no tests can be applied. The pedagogical experiment was evidently important enough to try and the new method was thought of as worth recording, but no record of results in detail was thought to be important. Experiments in method were in a number of cases praised and their effects were said to be good. But these judgments were evidently matters of mere opinion.

By way of contrast with these descriptions, there are presented in this *Yearbook* a number of exercises which exemplify methods that are at once novel and have been carefully worked out to their minut-

est detail. If a method is new, it requires more than any conventional method the most careful handling. Too much stress cannot be laid on the importance of full detail.

The Committee received a number of examples of supplementary pictures, maps, and specimens which had been prepared by various schools for the purpose of making instruction vivid and concrete. There were also descriptions of manual-training projects to be worked out in connection with reading and study lessons. Such supplementary materials are of unquestionable value and perhaps they deserve more recognition than this mention gives them. The difficulty of reproducing them in any adequate form explains their omission in large measure from this *Yearbook*. Some examples are retained, however, as parts of the exercises incorporated into the following pages.

The foregoing statements of omissions, together with the material printed in the following pages, will give a fairly complete idea of the kinds of work which are being done in the country by way of making new materials of instruction. The total amount of such work in existence is very difficult to estimate. The American school public is not trained to disgorge what it has. The Committee has found it necessary in some cases to ask again and again in order to get what it wanted. There were a great many people too modest to recognize their work as constructive. There were some who intended to get out books of their own and did not want the material "spoiled." There were others who were afraid that they would be criticized for crudeness. In short, the idea that a teacher may be professionally productive in a small way has still to be established by more studies of the type which this Committee has prepared. Doubtless, too, there were some who did not see the possibilities of any special good coming out of the quest and did not react to the Committee's call.

For the sake of the complete record the letter of inquiry used in getting the materials is reproduced herewith.

A committee of the National Society for the Study of Education was organized last year and charged with the responsibility of making a report on new materials which can be used to enrich the curricula of elementary schools and high schools. The committee is known as the Committee on Materials for Instruction. It plans to publish for the next meeting of the Society a Yearbook in which numerous examples will be presented of such new materials of instruction prepared by teachers in different parts of the

country and not yet incorporated into the textbooks. Some teachers have worked out lessons in local geography or civics; some have worked out science problems; others have done something in history or in literature that is unique in its content. What is wanted is definite content material, not descriptive accounts of what was done.

This is not to be a *Yearbook* of hopes and ambitions, nor of general statements, but a *Yearbook* of actual material available for classroom use, with only so much descriptive material in each case as is necessary to tell how the material was made and employed. Too much emphasis cannot be laid on the fact that what is wanted is material usable in the schools. It is hoped that the *Yearbook* may serve as a stimulus to teachers and supervisory officers to work on the general problem of enriching the curriculum through cooperative effort.

The *Yearbook* must go to press on the fifteenth of November, 1919. That means that the material must be in the hands of the Committee before October thirty-first, 1919, if it is to be used.

Though the Committee's request doubtless failed in many quarters where material actually exists, the conviction steadily grew as returns came in that the total amount of constructive effort in the country is small. Teachers, as remarked in the first paragraph of this introduction, are for the most part content to be and to remain copiers.

The Committee believes that this situation must be changed if large progress is to be made in the schools of this country. It is comparatively easy with the methods of criticism now at hand to find defects in school work. The time has come when a concerted effort on a large scale must be made to devise ways and means of progress. It is not possible by the mere making of tests and surveys to build up education. There must be positive ingenious discoveries to fill gaps and broaden the range of our present program.

There are certain administrative measures which are to be recommended to all school systems. This Society ought to encourage a general movement in all parts of the country to induce every school board to set aside a small amount of instructional energy each year for the purpose of making new materials of instruction. It ought to be somebody's explicit job in every school system to prepare material on local geography, civics and history in a form which can go into the hands of pupils. Some teacher who has shown aptitude along these lines ought to be allowed for a time a lighter program of routine work with the requirement that he or she show at the end of a period actual written material. The preparation of such material ought to be

accepted as one of the most valid grounds for promotion within the system. There ought to be committees in every system which pass on the validity of topics. In short, there ought to be set up a public institution of production just as there is now in the teaching profession an institution thought of exclusively as a distributing agency.

This brings the discussion to the point where it is appropriate for the Committee to submit its recommendations. These are five in number.

I. It is recommended that the Committee on Materials of Education be authorized to organize a number of subcommittees and if necessary to enlarge its membership so as to include in the central committee all chairmen of the various subcommittees. The subcommittees shall each be in charge of some line of work, this single line to follow one of the accepted subject-matter subdivisions of the curriculum such as geography, history, civics, etc., or to follow some administrative or experimental subdivision such as the seventh grade or supervised study.

II. It is recommended that these subcommittees be authorized to carry on in the name of the Society four lines of activity: (*a*) the collection of new materials wherever such can be found, (*b*) the systematic analysis of all material now in use, (*c*) the testing of results secured, and (*d*) the formulation of the result of their studies in each line into material directly usable in the classroom. The committees should be made to understand at every stage of the work that the goal of their efforts is the securing of tested and evaluated material ready to be put into the hands of pupils. Outlines and descriptions and above all hopeful plans for future work are not wanted.

III. It is recommended that the Central Committee be authorized to publish the reports of one or more of these subcommittees in the form of a *Yearbook* and also to authorize the publication of any material through other avenues which in its judgment may be the legitimate outcome of the work of any subcommittee.

IV. It is recommended that the Executive Committee of the Society be authorized at its discretion to pay the expenses of the Central Committee or any of its subcommittees so far as such expense is incurred for postage, stationery, and printing. It is to be expli-

citly understood that no funds of the Society are to be expended under this recommendation for salaries of any kind.

V. It is recommended that the Society adopt a resolution in the form submitted below and that it lend the influence of its organized effort to promoting in the schools of this country productive work among all classes of school officers. The resolutions are as follows:

Whereas, The rapid development of ideas and discoveries in the modern world brings to light many matters which should at once be introduced into the classrooms of public schools; and—

Whereas, The organization of schools as at present common in this country creates too little expectation that teachers will discover and formulate new material of instruction as a part of their regular routine, therefore be it

Resolved, That in the judgment of the National Society for the Study of Education it is highly important that there be set up in every school system some agency or agencies for the formulation of materials of instruction not to be found in existing textbooks, such for example as exercises on local industries, geography, history, and natural surroundings; and be it further

Resolved, That in the judgment of this Society boards of education should be appealed to, to grant to productive officers some time for work of this kind. The methods suggested for meeting such a request are partial release from routine for a period of months or explicit recognition of such productive work in making promotions; and be it further

Resolved, That publishers be urged to recognize the desirability of putting much more material into the form now commonly known as supplementary reading, to the end that textbook teaching may be easily supplemented by the introduction of current material.

It remains for the Committee in submitting the present Yearbook to emphasize the fact that this material is selected from samples collected from a wide range of schools. The Committee has had in its work the cooperation of a number of persons, especially the following; Professor John W. Hall of the University of Cincinnati, Professor Ernest Horn of the University of Iowa, Superintendent John W. Withers of St. Louis, Miss Katherine McLaughlin of the State Department of Wisconsin, President H. A. Brown of the State Nor-

mal School of Oshkosh, Wisconsin, and Professor W. S. Gray of the University of Chicago. In many cases excellent material submitted to the Committee was not used because it duplicated other materials already incorporated into the *Yearbook*.

Since the Committee had no opportunity to print its report submitted at the meeting of 1919, it has added that report as an appendix to the present volume.

Respectfully submitted,
Committee on the Materials of Education:

W. C. Bagley,
J. C. Brown,
C. E. Chadsey,
L. D. Coffman,
E. P. Cubberley,
E. C. Elliott,
H. C. Morrison,
G. D. Strayer,
G. M. Whipple,
C. H. Judd, *Chairman*.

I

READING EXERCISES BASED ON CHILDREN'S EXPERIENCES

Primary teachers have long recognized the necessity of supplementing the reading material of the printed primers by exercises made up directly from the experiences of the pupils. The exercises based on actual experiences have the advantage of drawing on a familiar but relatively diversified oral vocabulary and at the same time the pupils, recognizing the sentences as the results of their own authorship, pass readily from oral speech to reading.

A series of exercises and an account of the conditions under which they were made are supplied by *Miss Abbie A. Atwood of Janesville, Wisconsin,* as follows:

PRIMARY READING EXERCISES FROM JANESVILLE

The Rock County Fair is held usually the last week in August, but this year it was placed one week later—the first week in September—at which time the public schools were to open. Consequently that opening was postponed one week that the children might participate in the fair, and naturally the little ones were filled with the joy and excitement of their recent experiences, and the fair furnished a familiar ground upon which to base their first reading lessons. There was, indeed, only one out of the forty-one pupils who had not attended the fair some time during the week.

The language lessons for two weeks were based upon the relating and dramatizing of the parts of the fair which appealed to children.

The fair furnished a rich field for classroom construction work. First of all, money was made with which to pay expenses—street-car fares, entrance to grounds and grand stand, candy, ice cream cones, etc. The pupils made the ice cream cones and sold them; they cut kewpie dolls; they cut and colored balloons; they made stalls for the horses and cattle. Vegetables, fruit, pies, cakes, and cookies were

made of clay and colored for exhibition. The aeroplane which gave exhibitions each day was both drawn with crayons and constructed of paper.

The result of all this work was the reading material. This was procured by having all the pupils contribute something, then decide upon the parts which they wanted to save for a permanent story. This story was taught in simple units. The pupils read the entire sentence first, then the phrases were dwelt upon, but only briefly. These were grasped very quickly because of the vivid experiences. After the lesson was read from the blackboard it was printed upon heavy manila cardboard. In this form it can be read whenever the pupils wish to. They wanted to read these stories to the kindergarten; some have read them to their parents; others like to read them for their own pleasure.

The Fair

1. We went to the fair.
We saw some cattle.
We saw some kewpie dolls.
We threw balls to get them.
We saw an aeroplane.
It did tricks up in the sky.

Ice Cream Cones

2. We saw some ice cream cones.
A man sold them.
We bought some.
They cost ten cents.
Ice cream cones are good.
We like them.

The Hand Organ

3. We saw a man and a monkey.
The man had a hand organ.
It made music.
The monkey danced.
We gave the monkey a penny.
He put it in his pocket.
He made us laugh.

Besides this work such commands as the following were read silently and acted out.

Wave the flag.
Ring the bell.
Throw the ball.
Spin the top.
Sit on the chair.

Several Mother Goose rhymes, the pupils also learned to read, and a beginning has been made in reading simple signs. When a pupil has seen some sign and can tell me what it says, I print the sign for him. He puts it where others can see and helps all who are interested to read it. Much interest is shown by the pupils in learning to read each new sign as it appears.

For a month the kindergarten had been working on a project similar to that of the First Grade—the fair. They had transformed their room into the fair grounds. There were stores or booths built of blocks where ice cream cones, fancy whips, clay cookies and candy were to be sold. A band was there which gave a concert between the races.

A ride on the merry-go-round was a source of delight to many.

The first-grade children had made paper money with which to buy their entrance tickets at the gate and the things inside which appealed to them.

The following stories were the result of their visit to the kindergarten fair and their discussion of it.

Each morning a development lesson was carried out. In the afternoon the finished story was read and others—the choice of the pupils—were reviewed.

The kindergarten had a fair.
They asked the First Grade to come to their fair.
We made some money to take to the fair.
A little boy sold tickets at the gate.
We bought some tickets.
They cost fifty cents.
When we went in the band was playing.
We bought some ice cream cones.
They cost ten cents.
We bought some pretty whips.
They cost ten cents.

We threw a ball into a box to get a kewpie doll.
It cost ten cents.
We bought a ticket to sit in the grand stand.
The tickets cost fifty cents.
We saw a funny policeman.
We saw some races.
A bell rang and two boys had a race.
Then two girls had a race.
We clapped our hands.
We had a ride in the merry-go-round.
It cost ten cents.
It was such fun.
We laughed and laughed.
Then the band played and we went home.

Things We Liked at the Fair

I liked the merry-go-round.
George liked the races.
Helen liked the kewpie dolls.
Teddy liked the whips.
Louie liked the ice cream cones.
Dorothy liked the band.
Roger liked the policeman.

A man driving by the school with a load of pumpkins to sell brought forth this lesson with the imitation of the man's calling.

Hark! What is that?
Do you hear that bell?
Do you hear that man?
Hark! He cries out
"Pumpkins! Pumpkins!
Nice big pumpkins!"
Who will buy?
I will buy.
I want a Jack-O'-Lantern.

PRIMARY READING EXERCISES FROM ST. LOUIS

Two first-grade reading lessons arising out of community experiences are supplied by teachers in the *Samuel Cripples School, St.*

Louis, Miss Elizabeth M. Heil and Miss Clara A. Crowder. Following these are exercises used by the same teachers on occasions which were created within the school for the double purpose of teaching the children important lessons and supplying them with reading lessons.

The first is a lesson following the start of the balloon race which was witnessed by all the children. The class is a first grade in its first quarter.

The Balloon Race

We saw many balloons.
Some of them were up high.
Some of them were down low.
Some of them were far away.
Some of them were close.
They threw out sand to go up high.
They let out gas to come down low.

The second is a lesson given to a first-grade, first-quarter class on the day following the Veiled Prophet's Parade. The class had been in school about six weeks. Following this is a lesson on fire prevention.

We saw the Veiled Prophet's Parade.
We went down town to see it.
The cars were crowded.
The streets were crowded.
The parade was pretty.
Uncle Sam was on one float.
We saw some Japanese on one float.
We like the Veiled Prophet's Parade.

Fire Prevention Day

A fireman talked to us today.
He talked about fires.
He said fires burn many people.
He said fires burn sheds and houses.
He said not to play with matches.
He asked us to be careful.

The next is a lesson given to a first-grade, first-quarter class upon presentation of a flag to the room.

We see a flag.
It is red, white and blue.
It is our flag.
It has red and white stripes.
It has white stars.
We love our flag.
It will wave and wave and wave.

PRIMARY READING EXERCISES FROM LAKEWOOD

From the first grades of *Lakewood, Ohio*, various series of lessons are supplied by the following teachers: *Miss Leona E. Wilson, Miss Sara B. Talbot, Miss Myrtle Evans, Miss Olive M. Arnold, Miss Florence M. Gray, Miss Ethel Howard, Miss Jane M. Benham, Miss Blanche M. McDowell, and Miss Lena Lowary.* The Committee has selected from this large body of material a few of the most striking exercises.

Leaves

We found some leaves this morning.
We found some maple leaves.
We found some oak leaves.
We found some catalpa leaves.
We made a book of leaves.
It is fun to make a book of leaves.

Method

During the nature period maple, oak, and catalpa leaves were examined and discussed. For seat work the class pasted leaves on manila paper; then with these before them, they made free hand cuttings of the leaves. This was followed by the making of blue-print leaf books. The reading lesson was the outgrowth of a general discussion of leaves.

The sentences were written on the board as given by the class. A word was written on the board. A pupil found it in the story and told the class the word. A word was given and a pupil underlined it with colored crayon. A relay game was played with words, such as:

we	made	found	to
some	it	it	some
to	found	made	we

The score was tabulated by the pupils Two pupils with pointers in hand raced to find the word given by the pupil.

The Farm

We played we went to the farm.
We saw some ducks.
We saw some chickens.
We saw some cows.
We saw some pigs.
We saw some horses.
We saw some dogs.
We saw some geese.
We saw some guinea pigs.
We saw some guineas.
We saw some cats.
We saw some peacocks.
We saw some pigeons.
We saw some sheep.
The farmer's pets talked to us.
The duck said, "Quack, Quack."
The hen said, "Cluck, Cluck."
The rooster said, "Cockadoodle doo."
The cow said, "Moo, Moo."
The pig said, "Ugh, Ugh."
The dog said, "Bow, Wow."
The cat said, "Mew, Mew."
We all love the farmer's pets.

Method

An imaginary trip to the farm preceded the foregoing reading lesson. It was presented in a manner similar to Lesson 1. The pupils dramatized the various animals. During the seat period the class modelled the animals.

The class selected and underlined the words they knew; they also named them. Two of each of the words to be learned were placed on the blackboard ledge. The class was divided into two divisions. The pupils raced to find the cards. Later, the pupil who saw the card first in the race could keep it until the game was finished. The

words learned were:

we	some	pig	hen	cat
saw	said	cow	dog	all

Wheat

The farmer ploughs the ground.
He throws the wheat seeds all over the ground.
The wheat grows high.
A machine cuts the wheat down.
Then the wheat is tied in bundles.
These bundles are made into stacks.
The farmer puts the wheat in his wagon.
The wagon carries the wheat to the mill.
The wheat is made into flour.
The farmer takes the flour home with him.
The farmer's wife makes bread dough.
The farmer's wife bakes the bread.
The bread is good with butter on it.

Method

During the history period a wheat seed was examined. The growing of wheat was discussed. Pictures pertaining to the growth of wheat were shown. This was supplemented by rapid sketches made by teacher and pupils. The sentences were given by the pupils; they were put on the board in order given. The same devices were used as in Lessons 1 and 2. The words learned were:

farmer	seeds	to	is
ploughs	made	with	on
wheat	into	him	it

Bubbles

I like to blow bubbles.
The bubbles are round.
I blow bubbles with a pipe.
I dip the pipe in soapy water.
Then I blow a bubble.
I toss it into the air.

It flies away and bursts.

Method

Each child had a bubble pipe and dish of soapy water. The children blew bubbles and tossed them into the air. As they did this, they talked about the colors and the shape of the bubbles. They found that the bubbles were light and that they burst. The words learned were:

bubbles	like
I	blow

Jack-o-lantern

I have a Jack-o-lantern.
It was a pumpkin.
I cut two eyes in my pumpkin.
I cut a nose and a mouth.
I made big teeth.
I put a candle inside.
I will carry it at night.
Boys and girls will run home.

Method

We talked of Halloween; we used pictures of Jack-o-lanterns and witches; then, we made a community poster for our room. Besides this we made Jack-o-lanterns from plastecine. The words learned were:

have	girls	home	mouth
it	I	eyes	two
boys	run	made	

Making Lakewood Safe

We are helping to make Lakewood safe.
When riding we look for trains and street cars.
We are careful when crossing the street.
If we play with wagons we look both ways.
We like to play our "Safety Game."
It helps us to remember and to be careful.
Will you please help to make Lakewood safe?

Method

This lesson was given in connection with the "Safety First" program. During that week we used a standard with the words "Stop" and "Go." Thru games we carried out the idea of down-town traffic. The foregoing sentences were given by the children after the games had been played.

Words illustrated by pictures: trains, street cars and wagons.

Words used as review and taught for first time:

we	and	look	play	please
are	for	the	Lakewood	

My Airship

Daddy brought me home an airship.
It came from Japan.
It has silk wings.
It can fly.
I made it fly for the children.
They liked it.

Method

One day a child brought an airship to school. We let him fly it in the playroom. It flew half way across the room, pleasing the children very much. Hence the preceding sentences. We also drew and cut airships. The children played they were flying like the airships which everyday fly over our school. The words learned were:

it	children
fly	me

Our Family

This is the mother.
This is the father.
This is the brother tall.
This is the sister.
This is the baby.
Oh how we love them all.

Method

We sang the songs "Finger Play" and "This is the Mother." We drew pictures of members of the family; we made them of plastecine. We dramatized the son. The words learned were:

this	mother	sister	brother
is	father	baby	the

II

READING FOR CHILDREN IN NON-ENGLISH-SPEAKING FAMILIES

The reading materials supplied in the ordinary American primers are not adapted in most cases to the experience of children who grow up in homes where the English language is not spoken and where American customs are unfamiliar. The city of *Rochester, N. Y.*, has recognized the problem of providing proper primer materials for these children as one which must be dealt with by teachers familiar with the simple surroundings of such children. It has therefore encouraged the preparation of such a primer as the following, which is used by *Miss Clara L. Chitson in School Number 18.*

READING FOR FOREIGN CHILDREN, FROM ROCHESTER N. Y.

The following lessons were written for foreign pupils. They are used principally as language lessons for those who have no English vocabulary. For the older pupils reading and writing the lessons are the last steps. With the more capable pupils, as soon as a sentence is developed, it is written on the board for the purpose of formulating a reading lesson to be read later.

The method of presenting the work is a combination of action and object, supplemented by picture study. The work of the home, for example—setting the table, washing the dishes, sweeping the floor and making beds—is actually performed by the pupil with miniature sets of furniture, dishes, etc. Questions similar to the following form the language lesson:

"Who set the plate on the table?"
"What did he set on the table?"
"Where did he set the plate?"
"What did he do with the plate?"

The same verb is later used in other sentences, as "I set the box on the table."

Allowing more advanced pupils to ask the question is also a help in teaching English by the direct method. The dramatization of pictures is valuable in adding to the pupil's vocabulary.

Lesson 1

I take the baby.
Language—Apply "take" to objects in room.
Ask "Who takes the baby?"
"What do you take?"
"What do you do with the baby?"
"What does Mary take?" etc.

Lesson 2

I take the baby.
Mother takes the baby.

Lesson 3

I take the baby.
Mother takes the baby.
Father takes the baby.

Lesson 4

I take the baby.
I sit down.

Lesson 5

I sit down.
Mother sits down.
Father sits down.

Lesson 6

I take the baby.
I sit down.
I hold the baby.
Mother holds the baby.
Father holds the baby.

Lesson 7

I sit down.
I hold the baby.
I sing to the baby.
Mother sings to the baby.

Lesson 8

I hold the baby.
I sing to the baby.
Baby sleeps.

Lesson 9

I sleep.
Baby sleeps.
Father sleeps.
Mother sleeps.

Lesson 10

Baby sleeps.
I put baby in the bed.

Lesson 11

Baby sleeps.
Mother puts baby in the bed.
Father puts baby in the bed.

Lesson 12

I stand.
Mother stands.
Father stands.

Lesson 13

I stand.
I get the baby.
Mother stands. She gets the baby.

Lesson 14

I wash my face.
I wash my ears.
I wash my neck.
I wash my arms.
I wash my hands.

Lesson 15

Mother gets the baby.
She sits down.
She washes the baby.

Lesson 16

Mother gets the baby.
She sits down.
She washes the baby.
She dresses the baby.

Lesson 17

I am awake.
Mother is awake.
Father is awake.
Baby is awake.

Lesson 18

I am awake.
I get up.

Mother is awake.
She gets up.
Father is awake.
He gets up.

Lesson 19

I am awake.
I get up.
I close the window.

Lesson 20

I get up.
I close the window.
I wash my face, ears, neck, arms, hands.

Lesson 21

I wash my face, ears, neck, arms, hands.
I take a bath.
Mother takes a bath.
Father takes a bath.

Lesson 22

I take a bath.
I put on my underclothes.
Mother put on her underclothes.
Father put on his underclothes.

Lesson 23

I take a bath.
I put on my underclothes.
Mother takes a bath.
She puts on her underclothes.
Father takes a bath.
He puts on his underclothes.

Lesson 24

I put on my underclothes.
I put on my stockings and shoes.
Mother puts on her stockings and shoes.
Father puts on his stockings and shoes.

Lesson 25

I put on my underclothes.
I put on my stockings and shoes.
I comb my hair.
Mother combs her hair.
Father combs his hair.

Lesson 26

I comb my hair.
I brush my teeth.
Mother combs her hair.
She brushes her teeth.
Father combs his hair.
He brushes his teeth.

Lesson 27

I comb my hair.
I brush my teeth.
I clean my finger nails.
Mother cleans her finger nails.
Father cleans his finger nails.

Lesson 28

Frank is awake. He gets up.
He closes the window.
He washes his face, ears, neck, arms, hands.
He takes a bath.

Lesson 29

Frank puts on his underclothes.
He puts on his stockings and shoes.
He puts on his shirt and trousers.
Father puts on his shirt and trousers.

Lesson 30

Frank puts on his underclothes.
He puts on his stockings and shoes.
He puts on his shirt and trousers.
He combs his hair.
He brushes his teeth.
He cleans his finger nails.
He puts on his coat.
Father puts on his coat.

Lesson 31

Mary is awake.
She gets up.
She closes the window.
She washes her face, etc.
She takes a bath.

Lesson 32

Mary puts on her underclothes.
She puts on her stockings and shoes.
She puts on her skirt and waist.
Mother puts on her skirt and waist.

Lesson 33

Mary combs her hair.

She brushes her teeth.
She cleans her finger nails.
She puts on her dress.
Mother puts on her dress.

Lesson 34

I go to the cupboard.
I open the door.
I open the drawer.
I take the table cloth.
I unfold the table cloth.
I put in on the table.

Lesson 35

Repeat 34 with "Mary."

Lesson 36

Repeat 34 with "Mother."

Lesson 37

I go to the cupboard.
I get four plates.
I set the plates on the table.
I get four saucers.
I set the saucers on the table.
I get four cups.
I set the cups on the table.

Lesson 38

Repeat 37 with "Mary."

Lesson 39

Repeat 37 with "Mother."

Lesson 40

I set the plates on the table.
I set four cups and saucers on the table.
I get the sugar bowl.
I set it on the table.
I get the milk pitcher.
I fill it with milk.
I set it on the table.
I set four glasses on the table.

Lesson 41

Repeat 40 tiwh "Mary."

Lesson 42

Repeat 40 with "Mother."

Lesson 43

I get four plates.
I set them on the table.
I get four knives.
I lay a knife near the plate.
I get four forks.
I lay a fork near the plate.

Lesson 44

Repeat 43.
I get four spoons.
I lay a spoon near the knife.
I get four napkins.
I lay a napkin near the fork.

Lesson 45

Repeat 44 with "Mary."

Lesson 46

Repeat 44 with "Mother."

Lesson 47

Mother sits at the table.
Father sits at the table.
Mary sits at the table.
Frank sits at the table.
All eat breakfast.

Lesson 48

Mother gets the dishpan.
She washes the milkpitcher and glasses.
She washes the cups and saucers.
She washes the knives, forks and spoons.
She washes the plates.
Mary dries the dishes with a towel.

Lesson 49

I go to the bedroom.
I walk to the bed.
I turn the mattress.
I put the sheets on the bed.

Lesson 50

I turn the mattress.
I put the sheets on the bed.
I put the blanket on the bed.
I put on the spread.
I put the pillows on the bed.

Lesson 51

Repeat 50 with "Mary."

Lesson 52

Repeat 50 with "Mother."
The bed is made.

Lesson 53

I get the broom and dustpan.
I take them into the bedroom.
I open the window.
I move the bed and dresser.
I sweep the floor clean.
I put the broom and dustpan away.

Lesson 54

Repeat 53 with "Mother."

Lesson 55

I take the dust cloth.
I dust the bed and dresser.
I dust the window sills.
I shake the dust cloth.
I put the dust cloth away.

Lesson 56

Repeat 55 with "Mary."

Lesson 57

Mother washes the clothes on Monday.
She puts the tub on the bench.
She puts hot water in the tub.
She uses soap to clean the clothes.
She puts the clothes in the hot water.

Lesson 58

Mother uses soap to clean the clothes.
She puts the clothes in hot water.
She puts the washboard in the tub.
She puts the wringer on the tub.
She puts the basket on the floor.
She rubs the clothes on the washboard.
She puts them thru the wringer.

Lesson 59

Mother rubs the clothes on the washboard.
She puts them thru the wringer.
The clothes fall into the basket.
She takes the basket out doors.
She hangs the clothes on the line.

Lesson 60

Mother hangs the clothes on the line.
She hangs up the sheets, spread, table cloth, blankets, napkins, towels, underclothes, stockings, waists, skirts, dresses, aprons, collars, shirts and handkerchiefs.
The sun and wind dry the clothes.
Now they are clean and white.

Lesson 61

Mother irons the clothes on Tuesday.
She puts the irons on the stove.
She gets the ironing board.
She takes the shirts from the basket.
She irons the shirts and collars.

Lesson 62

Mother irons the waists and skirts.
She irons the tablecloth and napkins.
She irons the towels.
She irons the apron and handkerchiefs.
She irons the dresses.
She irons the underclothes and stockings.
She puts the ironing board away.

Lesson 63

Mother mends on Wednesday.
She gets the work basket.
She takes a spool of white thread.
She threads her needle.
She puts a thimble on her finger.

Lesson 64

Mother threads her needle.
She puts a thimble on her finger.
Now she mends the clothes.
She likes to sew.

Lesson 65

Mother sweeps on Friday.
She wears a dusting cap.
She gets the broom.
She gets the dustpan.
She goes to the dining room.
She opens the windows.
She sweeps the carpet.

Lesson 66

Mother sweeps the carpet.
Mary gets the dust cloth.
She dusts the table and chairs.
She dusts the pictures.
She dusts the window sills.

She dusts the clock.
She shakes the dust cloth.
She puts the dust cloth away.

Lesson 67

Mother bakes on Saturday.
She bakes bread and cookies.
She has a bowl and a spoon.
She has bread tins.
She puts the bread in the tins.
She puts the tins in the oven.
She has a rolling pin.
She makes the cookies.
She puts them in the oven.

Sports

Playing Ball

I have a ball.
I roll my ball to Mary.
I toss my ball.
Mary rolls her ball.
I bound my ball.
I throw my ball to Frank.
Frank catches the ball.
He throws the ball to me.
I catch the ball.

Jumping Rope

I have a rope.
I hold the rope in my hands.
I jump.
I like to jump.
Mary has a rope.
She holds it in her hand.
She jumps.
She likes to jump.
Do you like to jump?

Tag

I run after Mary.
I touch Mary.
She runs after me.
She touches Mary.
We run fast.
We like to play tag.
Do you play tag?
Does Frank play tag?

Flying Kites

I have a kite.
The kite is red.
It is a large kite.
It has a long string.
It has a long tail.
I run with my kite.
I fly my kite.
The wind blows the kite.

Coasting

It is winter.
I have a sled.
The sled is green.
It is large.
I sit on the sled.
Frank draws the sled.
He runs fast.
He runs down the hill.
He walks up the hill.

Dolls

Helen has a doll.
The doll has brown eyes.
The doll has a white dress.
Helen has a bed for the doll.
She holds the doll.
She dresses the doll.
Helen likes to play with her doll.
Her name is Bess.

Kitty

This is Kitty.
Kitty can run.
Kitty can play.
Kitty can jump.
Kitty plays with a ball.

Chickens

Do you see the rooster?
Do you see the hen?
See the little chickens.
There are one, two, three, four, five, six little chickens.
Two chickens are white.
Four chickens are black.
They live in a chicken coop.
They eat corn.
They drink water.

Thanksgiving

This is the day we say "Thank you."
We say "Thank you" for father and mother.
We say "Thank you" for food and clothing.
We say "Thank you" for our schools.
We say "Thank you" for good health.
We say "Thank you" for birds, flowers, animals and trees.

Flag Day

This is Flag Day.
Our flag is red, white and blue.
It has thirteen stripes.
It has seven red stripes.
It has six white stripes.
It has many white stars.
George Washington loved the flag.
Abraham Lincoln loved the flag.
We love the flag.
It tells us to be good, brave and honest.

Care of the Teeth

I have twenty-four teeth.
I use a tooth brush.
When I get up in the morning, I brush my teeth.
After breakfast I brush my teeth.
I wash my brush.
I brush my teeth after dinner.
I brush my teeth after supper.
I should not eat nuts or candy with my teeth.
I should not take anything very hot or very cold.
I should go to the dentist twice a year.
The dentist looks at my teeth.
He cleans my teeth.

READING FOR FOREIGN CHILDREN, FROM ROCHESTER, N. Y.

Another way of dealing with foreign children is illustrated by the statement and lessons which follow. These are put up in pamphlet form and there are pictures on every other page which must be omitted from this reproduction. The whole is the work of *Miss C. Nichols* of the First Grade B of the *City Normal School of Rochester, N. Y.*

The majority of the children in this grade are foreigners. They were without a background for the development of language and reading. So an actual trip was taken to the farm. These lessons were obtained by questioning the children. Each child will have a reading book of the lessons.

A handwork project is being carried out in connection with this work. The children suggested that the farm be placed on our sand table.

We went to the farm.
It was in the country.
We went on the car.
We walked too.
We saw corn fields.
We saw trees.
They were pretty.
Some trees were brown.
Some trees were red.
Some trees were green.
Some trees were yellow.
It was a pleasant day.

The sun was shining.
The sky was blue.
We picked up acorns.
They grew on an oak tree.
We found hickory nuts.
We picked goldenrod.
We saw apple orchards.
We saw the woods.
Hurrah! Here is the farm!
We saw the windmill.
It was very tall.
It was on a hill.
The wind blew it.
It turned around.
It worked for the farmer.
It pumped water.
Blow wind!
Help me work.
We saw the farmer.
We saw his wife.
Her dog said, "Bow! Wow!"
He was big.
He was black.
He helps the farmer.
He watches the farm.
We went to the barn.
We saw the hayloft.
The hay was in it.
We saw the horses.
They were in the stalls.
They were eating hay.
The horses work for the farmer.
"Quack! Quack!" said the ducks.
See how white we are.
We are clean.
See our yellow bills.
We have web feet.
We swim in the pond.
The farmer feeds us.
He feeds corn to us.
We saw the cows.
"Moo! Moo!" they said.
"We will not hurt you," said the cows.
One was Nell.
One was Baby.
They give us milk.
We drink milk.
Thank you good cows.
The geese were in the yard.
They were pretty.
They were gray and white.
They had long necks.
They have pretty feathers.
They can swim.
They swim in the pond.
Cluck! Cluck! Cluck!
I am a hen.
I am a red hen.
I live on the farm.
My nest is in the barn.
I lay eggs.
The farmer feeds me.
I like to eat corn.
See the big stone.
It is a grindstone.
It turns around.
The farmer turns it.
He drops water upon it.
He sharpens his scythe.
"Oof! OOf!" said the pigs.
See our big pen.
We are seven little pigs.
See our big father.
See our big mother.
We like to eat corn.
We like to drink milk.
We saw the corncrib.
It is a house.
It was full of corn.
It was built on stilts.
The pigs eat corn.
The chickens eat corn.
The ducks eat corn.
We saw the sheep.
They were in the field.
They were eating grass.
"Baa! Baa!" they said.
"See our thick coats."
The farmer will wash us.
He will shear us.
The farmer was at work.
He was in the field.

He had his horses.
He cut the corn.
He put it on the wagon.
He took it to the barn.
He cut it again.
He put it in the silo.
The farmer was kind.

He showed us many things.
His wife was kind.
She gave us apples.
She said, "Come again."
"Thank you, Mr. Farmer."
"Thank you, Mrs. Farmer."
"Good bye."

III

READING FOR NON-ENGLISH-SPEAKING ADULTS

As one important branch of the Americanization Movement, there have been prepared lessons for the teaching of English to adults. The Army encountered the fact that well-meaning persons who attempted to teach illiterate recruits how to read were seriously handicapped for lack of suitable reading lessons. At Camp Custer a trained teacher of children prepared a primer of military phrases.* In many cities where Americanization classes are being organized at the present time there is a good deal of floundering because of lack of organized material. The examples which are given below are borrowed from the loose sheets prepared for the *Massachusetts Department of University Extension by Mr. Charles F. Towne.* They are not universally usable, as is clearly indicated by their specialized content, but they serve as good examples of the way in which teachers of adults should develop whatever topics they take up. They indicate that suitable subjects should be chosen from the interests of the learners and these subjects should then be worked out in systematic detail.

Mr. Towne's statement regarding the purposes of the exercises is as follows:

"The value of a common language for all the citizens of America has been well illustrated by many events of the past four years. It was a tremendous shock to America when it was discovered that more than five and a half million of people in the United States were illiterate and that in addition the number of non-English speaking people from foreign countries made a total of eight million who were unable to speak or understand English or to read or write it. The

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* Similar undertakings developed in many camps. Particularly noteworthy was a series of Camp Readers, prepared and widely used by the Educational Department of the Y.M.C.A. These books were the work of trained educators temporarily in the service of the "Y," and represented earnest efforts to meet the urgent need for text-books useful in military training and at the same time to promote the ideals citizenship. —*Editor*.

place that language fills in the development of patriotism is now well understood and today a great movement is sweeping the country, having for its aim the eradication of illiteracy and the making of English the common language of America.

"This movement is sometimes spoken of as Americanization. Unfortunately, the word has been frequently misused and therefore has lost much of its value. In this connection, however, it must be borne in mind that the teaching of English to non-English speaking people is after all only one step along the road toward loyal citizenship and genuine Americanization. While it is in itself one of the first steps, it is also a very important step, because, in spite of our boasted freedom, a man cannot be truly free in America unless he speaks the language of the country. Ignorance of English tends to shut the individual into the foreign group, restricts his sphere of activity, and prevents him from establishing friendly contacts with all of his American neighbors and hides from him opportunity which is after all one of the essential privileges of living in America."

READING FOR FOREIGN ADULTS

There follow specimens from the various sets of lessons.

English for American Citizenship

A. Series for Women with Home Interests:

Lesson I

Part I—Baby's Bed

1. Baby sleeps in a large clothes basket.
2. I move the basket about easily.
3. I keep the basket clean.
4. I use a hair pillow for a mattress.
5. Over this I place a piece of oilcloth.
6. Over this I put a piece of padding.
7. I put baby on this padding.
8. I cover him with a cheesecloth blanket.
9. I make this blanket of cotton batting.
10. I can wash the blanket easily.
11. The blanket keeps baby warm.

Part II—Baby's Nap

1. I move the basket out of the strong light.
2. I move the basket away from the window.
3. I open the window from the top and bottom.
4. I throw netting over the basket.
5. The netting keeps away the flies.
6. Baby sleeps from sixteen to twenty hours.

7. I do not rock him to sleep.
8. I do not sit with him.
9. He is a good, healthy baby.

Lesson II

Bathing Baby

Part I—Getting the Bath Ready

1. It is nine o'clock in the morning.
2. I get the tub.
3. I fill the tub with warm water.
4. I feel the water with my elbow.
5. The water is warm.
6. The water is right for Baby.
7. I get his wash cloth.
8. I get his soap.
9. I get his towel.
10. I get some absorbent cotton.
11. I get his powder.
12. I get a cup of warm boiled water.
13. I wash my hands.
14. I undress baby.
15. I put him into the tub.
16. I slip my left arm under his back.
17. He rests on my arm.

Lesson XXIV

Sending the Letter

1. I entered the post office.
2. I went to the stamp window.
3. I said to the clerk, "Give me five three-cent stamps and five postals, please."
4. I paid him fifteen cents for the stamps and ten cents for the postals.
5. I gave him a quarter.
6. I pasted one stamp on my letter to Henry.
7. I put the other stamps and the postals in my bag.
8. I looked for the letter-box.
9. I saw a slit marked "Letters."
10. I put my letter through the slit.
11. I said to the clerk, "How does my letter go from here?"
12. The clerk replied:
    "The letter will be put into a bag with other letters.
    Auto trucks will take the bags to the railroad station.
    The mail train carries them to another city.
    Auto trucks take the mail to the steamer.
    The steamer takes it to France.
    Your boy will receive this letter.
    He will be a happy boy."
13. I thanked the clerk and left the post office.

Lesson XXV

Sending a Money Order

1. I want to send five dollars to my boy.
2. He works in New York City.
3. I go to the post office.
4. I go to the window marked "Money Order."
5. I say to the clerk, "Please give me a money-order blank. I want to send money to my boy in New York City."
6. The clerk gives me a domestic money-order blank.
7. I write the number of dollars.
8. I write the name and address of my son.
9. I write my name and address.
10. I give the blank to the clerk.
11. I give him my five dollars.
12. He says, "Five cents for the order, please."
13. I pay him five cents.
14. He makes out the money-order.
15. He gives me the money-order.
16. He gives me a receipt.
17. I put the receipt in my pocket-book.
18. I put the money-order in my letter in the envelope.
19. I address, stamp, and seal the envelope.
20. I write my name and address in the upper left-hand corner.
21. I mail it to my boy.
22. My boy will take it to the nearest post office in New York.
23. The postmaster will give him the five dollars.
24. This is a very safe way to send money.

B. Industrial Series

Lesson I

Pulling the Check

1. I enter the factory.
2. I walk to the check-rack.
3. My number is 231.
4. I take down my check.
5. I go to the check-box.
6. I put my check in the box.

Punching the Clock

1. I enter the factory.
2. I walk to the time clock.
3. My number is 15431.
4. I see my number on a button.
5. I press the button.
6. I hear the bell ring.

(Women)

7. I go to the clothes rack.

8. I put my lunch on the shelf.
9. I take off my coat and hat.
10. I hang up my coat and hat.
11. I take down my apron.
12. I put on my apron.
13. I put on my working gloves.
14. I am ready to begin work.

(Men)

7. I go to my locker.
8. I open the door of the locker.
9. I put my lunch box on the shelf.
10. I hang up my hat and coat.
11. I take out my overalls and jumper.
12. I put on my overalls and jumper.
13. I shut the door of the locker.
14. I lock the door.
15. I go to my work-room.

Lesson II

Getting Paid

1. I get a pay slip every week.
2. It shows my wages for the week.
3. I write my name on the pay slip.
4. The paymaster comes along.
5. I give my pay slip to the paymaster.
6. He hands me my pay envelope.
7. I say, "Thank you."
8. I open the pay envelope.
9. I take out the money.
10. I count the money.
11. It is correct.
12. I put the money in the envelope.
13. I put the envelope in my pocket.

Lesson III (a)

Buying Clothing (Men)

1. I want to buy an overcoat.
2. I go into the clothing store.
3. I say, "Please show me some overcoats."
4. The clerk asks, "How much do you wish to pay?"
5. I answer, "About twenty dollars."
6. The clerk shows me some overcoats.
7. I try on one; it is too small.
8. I try on another; the sleeves are too short.
9. "Try this one," says the clerk.

10. I put on the overcoat.
11. It fits me.
12. I feel of the cloth.
13. It is thick and woolly.
14. "I like this coat. How much is it?"
15. "The price of that coat is twenty-two dollars."
16. "Very well. I will take it."
17. I take off the overcoat.
18. I give the salesman twenty-two dollars.
19. He puts the overcoat in a box.
20. I take the box and go out of the store.

Lesson XV

The Fire Drill

1. Sam works in a large factory.
2. His work-room is on the third floor.
3. The employees were busily at work.
4. The fire alarm sounded.
5. They formed in lines.
6. Each one took his place quietly and quickly.
7. They walked toward the exits.
8. They did not hurry.
9. There was no confusion.
10. Men and women marched from other rooms.
11. They all went down the stairs together.
12. They came to the street door.
13. They marched out to the sidewalk.
14. They did not break their lines.
15. They waited for the signal to return to work.
16. The foreman gave the signal.
17. The workers marched back into the factory.

Lesson XVI

Why Maria Always Wears a Cap

1. Maria had beautiful black hair.
2. It was very thick and long.
3. All the girls in the factory wore caps when working.
4. Maria would not wear a cap.
5. One day the girls were busily at work.
6. Suddenly they heard a loud scream.
7. Maria's hair was caught in the machinery.
8. The foreman ran to shut off the power.
9. Some of the girls fainted.
10. Maria's scalp was torn from her head.
11. She was rushed to hospital.
12. The doctors could not save her beautiful hair.

13. Now Maria's head is ugly to look at.
14. She has to wear a cap all the time.
15. "If I had only worn a cap while working," says Maria.
    Cover the hair with a cap when working near machinery.

Lesson XVII

Care of Cuts and Burns

1. If the Cut is Slight

1. Wash out with clean water and an antiseptic.
2. Cover with collodion.
3. Bind with a clean cloth.

2. If the Cut is Deep

1. Do not wash the cut.
2. Make a compress of clean cloth.
3. Bind firmly on the cut.
4. Go to the doctor for treatment.

3. If the Burn is Slight

1. Apply vaseline or baking soda on a soft, clean cloth.
2. Bind with a clean bandage.

4. If the Burn is Deep

1. Place a cloth covered with vaseline over the burn.
2. Bandage with a clean white cloth.
3. Go to the doctor for treatment.

5. When the Burn is very Serious

1. Call a doctor at once.
2. Lay a cloth soaked in carron oil over the burn.

IV

TESTS IN READING AS PART OF CLASSROOM ROUTINE

The *City of Los Angeles* is trying under the direction of *A. H. Sutherland, Psychologist of the City School District*, a unique series of experiments in reading. These experiments are at present limited to the special rooms where work is going on with ungraded pupils. They comprise a series of tests which are used following each reading exercise. The motive for evolving these tests is stated by Mr. Sutherland as follows:

"In studying the Ungraded Rooms of Los Angeles, one fact soon became glaringly apparent—especially in the case of the upper-grade pupils who had repeatedly failed. The children were unable to read with comprehension. They were unable to read and understand arithmetic problems. They were unable to read and comprehend geography. They were unable to read and understand directions. Something in the earlier instruction of these pupils has gone amiss. Therefore, it became necessary to focalize our efforts on a study of the causes of failure in reading. Before this could be done satisfactorily, it was necessary to reduce some of the conditions to a common basis. The result has been our series of Practice Exercises in Reading, organized around Projects (which are arbitrary—quite as much so as the curriculum). These exercises are made up from and are used with one of the school readers."

His further statement regarding the use of these tests is as follows:

"What is expected of these Practice Exercises in Reading? To answer this question after the exercises have been used for part of a year it is only necessary to turn to our records of pupils brought up to grade, returned to a grade from one to four years higher, and note the subsequent report of the teacher. Of the 38 pupils who were sent to the grades from the experimental rooms before the end of the school term and regarding whom the regular teacher's subsequent report has been received, two only have been marked 'Unsatisfactory' and one of these applies to arithmetic (number combinations). Some 200 other children remained in our special rooms to the end of the term and are now being carefully watched in the higher grade to which they have

gone. The report on these will be available sometime during the next month.

"A theoretical answer also may be given. The reading lesson of the present day is usually a lesson in the recognition and pronunciation of words. In very recent years some attention has been directed toward comprehension by the use of the administrative test. But the teacher is slow to adopt a change from the 'methods' taught her in the normal school. Our aim has been to disregard these 'methods' in reading. We wish to secure the cooperation of the pupil and teach him to read by giving him *something to do* with what he reads.

"When the pupil reads his lesson, he soon learns to expect an exercise. The type of exercise is unknown beforehand. The pupil soon learns to read his lesson with the intention of firmly impressing the content on his mind, and also with the expectation that not some other member of the class, but he himself, will have to do something with the material when he is face to face with the exercise

"By multiplying the number of test forms, we have been able to set up a variety of mental attitudes, and to bring to the study period an extremely alert consciousness which provides a wide-awake motivation. It has been found that some of the teachers can soon learn to make these practice exercises and that they become enthusiastic about it, once they catch the idea. However, other teachers fail entirely to understand that pupils must learn to make a mental reaction in reading. They themselves simply read. They were so 'taught' in the public school. The attitude was not corrected in the normal school, and today, as teachers, they are prepared only to 'teach reading.' As evidence of this, the Kansas Silent Reading Test for Grades 6–7–8 was given to volunteers at a teacher's examination. The medium performance was 29.9. The group, presumably from the better, or at least more self-confident half, read very little more successfully than the pupils. How, then, can they teach pupils to select, to digest, classify, associate, and organize the subject matter? Say not that this is a problem for the high school. Where is the high-school teacher who is doing it? But there are numerous elementary pupils who are not forming habits of mental reading along just the above lines. The subsequent records of pupils once backward, who have become forward, demonstrate that the effect is not momentary. After watching the progress, it is not hard to believe that there is more likely to be 'mental training' in reading, properly learned, than in mathematics."

In the examples of the tests themselves which are appended. Sample No. 1 is a Completion Test (in other words the old-time "Language Exercise"); Sample No. 2 requires word grouping and is

called a "Controlled Association Exercise"; Sample No. 3 is an exercise in comprehension which does not require full memory of number combinations but which does require apprehension of their values; Sample No. 4, taken from 5th-grade level of exercises, directs attention to analogies.

Sample No. 1

A Dog of Flanders

Lesson I, Page 192

Date.................... Name..................................

1. Write here the name of the place where Nello lived............................
2. Write eight words here that tell where Flanders is...........................

   ....
3. Did you hear of Flanders while our soldiers were fighting in the great war?..........
4. Write here a sentence that tells you whether Nello and his grandfather were rich or poor...
5. Fill in these blanks. A .... ran through the village. There was always .... in it and .... grew by its .... Nello .... by its bank in his little .... shoes and saw the .... and .... and his own .... in the ....
6. Who was Patrasche?
7. Write five short sentences here that tell what he looked like.

Lesson II, Pages 193–196

1. Write the word that tells what kind of master he had. ....
2. Write three words that tell what the master did while Patrasche worked.

   ....
3. Write one word that tells how much Patrasche got to eat. ....
4. Write seven words that tell how Patrasche felt when he fell in the road. ....

   ....
5. Who found Patrasche?
6. Was he really dead?
7. What made him wonder?
8. Has he ever been treated kindly before?
9. What grew in his heart for little Nello?

Sample No. 2

Word Association I—Grade IV

Date...................... Name..............................

Pick out all the words in the left-hand column and copy them in the right-hand column under the words that they seem to belong to, as we have done with harvest.

flail	*wheat*	harvest	
seeds			....
waves	*threshed*		....
cow	....	....	
twitter			
crops		garden	
grow	....		....
seashore	....		....
milk		....	
nest			
sheaves		sea	
sprinkler	....		....
tide	....		....
sing		....	
plant			
surf		dairy	
cream	....		....
flit	....		....
ship		....	
milkman			
wings		bird	
hose	....		....
butter	....		....
		....	

Sample No. 3

Quantitative and Special Relations—Grade IV

Date........................... Name..........................

1. Jack and Charlie each had a dollar to spend. Jack bought 45c worth of nuts and Charlie bought 39c worth of candy. Write the name of the one who would get the most change. ....

2. A milkman has two gallon measures full of milk. From one he fills quart bottles. From the other he fills pint bottles. Should he tell the helper to bring him more of the pint or quart bottles?..

3. Harry went to the bank and changed his dollar into 10-cent pieces. John had his dollar changed into 5-cent pieces. Which boy had more pieces of money?........

4. If a nickel takes up just twice as much room as a dime, would one boy need a larger purse than the other ? .... If so, which one? ....

5. Our baby's bottle holds just half a pint. We fill it half full of milk and half full of barley water. Should we buy a pint or a quart bottle of milk to feed her four times a day ? ....

6. A party of boys go boating. They divide into two companies of 12 boys each. There is one boat that holds two in a seat. All the rest will carry one in a seat. There are six seats in each boat. Will two boats be enough? ....

7. A crowd of people go on an excursion. They find one train that seats two persons in a seat and another that seats one person in a seat. The second train has twice as many cars in it as the first one. Will more persons have to stand in the first or second train? ....

Sample No. 4

Analogies. Miscellaneous.

Date............................ Name............................

Think what the following sentences mean. Fill in the blanks in each of the sentences with the word that fits the meaning.

1. A lion is as big to a mouse as a .... is to a butterfly.
   king, ant, boy, bug.
2. Gasolene is to an .... as steam is to an engine.
   water, row-boat, auto, coaster.
3. A weed is to a tree as a .... is to a telegraph pole.
   wire, ladder, match, fence.
4. A saw is to .... as scissors are to a piece of cloth.
   thread, hammer, iron, wood.
5. Oars are to a .... as pedals are to a bicycle.
   street-car, auto, row-boat, boy.
6. A lock is to a safe as a padlock is to a ....
   barn, door, fence.
7. An ant is to an ant-hill as a .... is to a house.
   door, window, fence, man.
8. A boy with a shovel is to a sand-pile as a steam shovel is to a ....
   bucket, mountain.
9. A thrift stamp is as much to a .... as a bond is to a banker.
   bank, boy, purse.
10. A piece of butter melts in a stove as iron-ore melts in a ....
    mining, black engine, furnace.

V

READING INSTRUCTIONS FOR COLLEGE STUDENTS

The importance of teaching older people how to read effectively, especially when they read silently, has been fully discussed in the recent literature of education. There is no large body of material, however, on the methods of teaching silent reading, though some high-school teachers and even some college teachers are taking steps in their classrooms to meet this deficiency.

Several pages of assignments in actual classroom use are presented herewith. They are taken from a mimeographed volume which is being used in the *Freshman course in English at the University of Chicago* with certain divisions made up of students from the Colleges of Education and Commerce and Administration. The mimeographed sheets contain readings borrowed from various writers. These readings are followed by so-called laboratory exercises and by amplifying lessons. The quotations with which the first lesson opens will not be reproduced here; they are taken from Swain, *How to Study;* Hall-Quest, *The Textbook;* McMurry, *How to Study;* Lowell, *Books and Libraries*; and Kerfoot, *How to Read.* The general subject under discussion in this part of the text is reading for the principal idea. After the quotations come the pages that follow, which are typical of the course.

Laboratory Exercises

1. Objective stated. When and why do we read for central idea?
2. Read McMurry, "Provision for Specific Purposes, as One Factor in Study."
3. Lead discussion of content to: What is central idea?
    a) Which sentence is most terse and full of meaning?
    b) How do you change it when you have read the whole selection?
4. What did you do?
    a) Was your method the same as that you use in preparing a history text assignment for recitation; the reading in *Industrial Society*: "Structure and Function of Medieval Society: Problems at Issue?"
5. What are some of the things we do when we read for the central idea?
    a) Look for hint of main idea in title.
    b) Look for author's statement of main idea near beginning of reading.

c) Vary rate of reading.

6. Read once *Learning to Read*, Kerfoot, quite rapidly.
7. Discuss: How did Kerfoot develop his meaning of "learning to read?"
   a) Lead discussion to: What parts will you need to read again for clear understanding?
8. Discuss: What 'sign-posts' are there in well-unified writing?
   a) How does the author help the intelligent reader to get at the central idea?
9. Discuss: Finding the central idea in different kinds of writing.
   a) Where do you look for the central idea in a newspaper article?
   b) Compare the method Kerfoot uses in presenting his main idea with that of McMurry. Which method will be found most in the kind of reading you will do in college?
10. Suggestive assignment: Read the following selections for the principal idea:
    a) "Text-books and Books of Reference," Adams, J., *Making the Most of One's Mind*, Chap. VII.
    b) Marshall, *Readings in Industrial Society*, p. 30.
       "Wherein Harmony, Wherein Disharmony of Structure," from J. A. Hobson, *The Science of Wealth*.
       "Four Stages in the History of Industry," p. 32, from W. J. Ashley, *The Economic Organization of England*.
    c) Within week read through one of the following in two or three hours only:
       Let your problem be: What has this book for me?
       McMurry, F. M. *How to Study*.
       Kitson, H. D. *How to Use Your Mind*.
       Adams, John, *Making the Most of One's Mind*.
       Kerfoot, J. B. *How to Read*.
       James, W. *Talks to Teachers on Psychology*.
    d) Select one of the books listed above to read through during the quarter.
11. Study the following method for reading for the principal idea.

I. Reading for the Principal Ideas. A Method

A. What End do you Expect this Reading to Accomplish?
   1. How does this reading fit into the course?
   2. Is this reading related to other subjects?
   3. What do you know about this subject?
   4. What do you expect this reading to give you?
      Preface, title, table of contents may help you.

B. Read for a Bird's-Eye View of Whole.
   1. Watch for the author's statement of his main idea.

      A good author usually states his fundamental idea somewhere near the beginning of his book, and usually outlines the plan he will follow. Just as your instructor tells you the plan of a course in his first lecture, so a reliable author gives you early in his book its plan and scope. In the logical divisions of a book, the author follows the same method in present-

ing the main idea and the plan of each division. Very often at the end of a book or a reading selection, the main idea will be repeated.

Look for the author's statement of his main idea! A good reader learns where to look for the author's 'sign-posts.'

2. Keep the main idea in mind throughout.

"The student must not only find the central idea as early as possible, but he must hold it with a firm grip. Both of these things require much tenacity of purpose . . . temptations to forget about the main issue and to become absorbed in . . . details are present . . . having found (the details are present . . . having found (the central idea) . . . nurse it by recalling it every few minutes, while using it as a basis for determination of values."[1]

3. Note how the paragraphs repeat the main idea.

Every paragraph in a composition must help either.

a) To explain what the topic thought is; or
b) To prove it; or
c) To convey additional information about it; or
d) In some other way to make us keep it in mind and comprehend it more fully."[2]

In what way does each paragraph develop main idea?

Does idea grow with each restatement?

4. Read rapidly

"How to read rapidly. A few simple rules will aid the pupil to accomplish an immense amount of reading . . .

Read sentences, not words . . .

Important words, as a rule, appear at the beginning and at the end of a sentence; the subject, for example, usually being found at the beginning.

Glance rapidly over the paragraph for leading words and sentences. The first and last sentences, as a rule, are most important.

The first and last paragraphs ordinarily are more important than those intervening, but the pupil should get the main words of each paragraph also. The first states the subject or point of view, the intervening ones add points of development and in the last may be found conclusions, summary, or a final vital point.

Practice will facilitate the discriminate elimination of modifiers, conjunctions, repetitions, and the perfectly obvious."[3]

"Many students read at all times at a pace not much faster than that acquired through oral reading. But much reading to be economically done demands a pace from two to four times as fast as oral reading.

To read fast it is necessary to read sentences groups rather than individual words. You must learn to leap from one sentence to the next, not stopping to dwell upon every word and phrase. You must learn to

[1] McMurry, *How to Study*, pp. 115, 117.
[2] Neal, *Thought-Building in Composition*, p. 18.
[3] Hall-Quest, *Supervised Study*, p. 201.

fill in the thought from two or three salient words in a line; and with no second glance you must press on, trusting to later sentences to clear up meanings that you do not instantly catch."[4]

a) Pay special attention to:
   i) Topic sentences of paragraphs
   ii) Two or three salient words in sentences.

b) Learn to skip judiciously.

"Foremost among (the practical problems that face the student) is the question of skipping. You are not to make the mistake of treating this as a purely moral matter. There are cases where skipping is contemptible; there are others in which to do anything else is foolish. The important thing is not the number of pages you cover, but what you get out of them. Your reading must be dominated by purpose. You go to a book for a definite purpose; unless you make the book serve that purpose you have not used it wisely. Not to skip may be a very immoral proceeding. You go to a book to find examples of certain grammatical constructions: it is altogether wrong to read doggedly through it. You wish to form an idea of a man's character from his biography. A great deal of the matter in the book we take up may be of no value to us whatever and ought to be ruthlessly skipped, if we hope to look our conscience in the face. The spirit of the collector, the lust for completeness, rather than a good going conscience accounts for the unwillingness of many people to skip."[5]

   i) Modifiers may be skimmed.
   ii) Sentences that do not seem pertinent may be skimmed over.
   iii) Sentences in which author is obviously floundering may be skipped.

c) Do not stop until you have finished entire readings (if selection can be read in reasonable period of time; otherwise stop at first logical stopping place after 20 minutes of reading).

d) When you find yourself reading words, recall main idea.

e) Do not stop to hear words mentally.

f) Advance by groups of facts

". . . advance by groups of facts . . . the smallest unit of progress should be a considerable number of ideas so related to one another that they make a whole; those that are alike in their support of some valuable thought making up a bundle, and the farther-reaching, controlling idea itself constituting the band that ties these bits together and preserves their unity. Such a unit, or, 'point,' as it is most often called is the basal element in thinking, just as the family is the basal element in society."[6]

C. State Principal Thought in One Terse Statement.

"A . . . most common source of error is found in the particularwo rding given to the central thought. In order to be perfectly definite and

[4] Sandwick, *How to Study*, pp. 57–58.
[5] Adams, *Making the Most of One's Mind*, p. 175.
[6] McMurry, *How to Study*, p. 93.

accurate any thought should be expressed in the form of a full statement. It ordinarily takes at least a whole sentence to express a whole thought. But it is very common for students even, who have formed the habit of thinking by points, to allow brief headings, consisting of single words or short phrases, to represent entire thoughts. Although such headings, on account of their brevity, may be useful, they are merely names for the thought itself, not statements of the thought itself; and it means the loosest kind of thinking to stop with them. . . . It is usually easy to tell 'what a page is about'; but it usually requires keen thinking to word its principal idea sharply in a full sentence. Many students are inaccurate in the interpretation of authors and in their own thinking, not so much because they lack mental ability as because they lack the energy to continue their thinking to the point of wording the central idea accurately in a full sentence."[7]

"It cannot be repeated too often that one of the ends of education is to train the pupil to state in his own language, with increasing clearness and accuracy, what he has studied in the language of others."[8]

D. Reread, Using Main Idea.

Use it to clear up parts you did not understand.

"The individual statements vary greatly in value, as we have seen, some requiring only slight attention, while others must be closely scrutinized. What determines their value is their relation to the leading ideas. The latter are the sole standards of worth, the sole guides, in discriminating among them. If, then, the student has not found out what the leading ideas are, what basis of selection has he? How, then, is he to know what are the important details and what are the unimportant? What can he do, then, more than merely distribute his energies somewhat equally and blindly over the various statements offered, until the principal thoughts come to light? Only after that will he be in a position to measure relative values and thus to deal with the details intelligently. The first plan, therefore, involves a great waste of time. For the same reason that it is economical to go sight-seeing with a guide, or at least to examine a guidebook before setting out, it is economical to determine the gist of the thought, the spirit and substance of the whole, before giving careful attention to the minor parts."[9]

a) Have some of parts been explained as you read?
b) Use now knowledge you have gained in reading whole.

E. Restate Main Idea, Listing Under it Chief Supporting Ideas.

Laboratory Exercises (Application of Method)

1. Discussion: Applicability of these principles:
   a) How does the title of *Wherein Harmony, Wherein Disharmony* help you in your reading of the selection?

[7] McMurry, *How to Study*, pp. 101–102.
[8] Hall-Quest, *The Textbook*, p. 152.
[9] McMurry, *How to Study*, pp. 114–115.

b) In *Readings in Industrial Society* how does the opening portion of Introduction illustrate principle of grasping the fundamental idea early in your reading and using it throughout?

c) How does the Table of Contents in *Readings in Industrial Society* help you in individual readings?

2. Select other readings for practice in this method.

Review of Important Points

1. Reading for the principal idea.
   A. Determining your aim.
   B. Reading for bird's-eye view.
      Finding author's statement of main idea.
      Reading rapidly.
   C. Stating main idea in one terse statement.
   D. Using main idea in second reading for clear understanding.

VI

A BOOK PREPARED BY PUPILS

The written work which pupils prepare is often of such little interest to them and to their teachers that it is thrown away after it has been corrected as to its spelling and punctuation. There is no reason why pupils should not write on subjects which have permanent value. The results of their efforts can in such cases be accumulated to furnish some of the most interesting materials for subsequent reading.

An example which shows what can be done on a large scale along these lines is a book of 212 pages, entitled "*Bay County, Past and Present*," published in *Bay City, Michigan*. The book is edited by *Mr. George E. Butterfield*. A description of the way in which it was prepared is given by *Superintendent Gause* as follows:

"This book was compiled by the Six-B classes of the city under the direction of the teacher in charge of the geography work. After the material was all in, a pupil was appointed from each sixth grade in the city as a member of a general committee to decide as to what material submitted should be used and what should be thrown out. After this work had been done the committee then set itself the task of editing the material for publication. It was a most interesting piece of work and took the sixth grade all of a year and a half. We are still gathering material for the purpose of revising this book when the number we have on hand is exhausted."

The following pages will give some idea of the kind of material which entered into the book.

Chapter VIII. Native Life

The Chippewa Indians

The majority of the Indians who remained and made their homes in the Saginaw Valley belonged to the Chippewa, also known as the Ojibway tribe. Mingling as they did with several other tribes, their language and some of their customs differed somewhat from the more northern Chippewa Indians, and they came to be known to the white people as the Saginaw Indians.

They, like the Ottawas, Hurons, Potawatomies, Menominees and others, were of the Algonquin race, and although they frequently fought these other tribes, they would unite with them against a common enemy. The Saginaw Valley, probably because it

could be reached easily from all directions, was often made the meeting place of councils of these various tribes. The last great tribal meeting was held as late as 1865, at Wenona Village, about three miles from the mouth of the river.

This was, as we have seen in the preceding chapters, a very favorable place for the Indians. Fish and game were in abundance. There were many useful food plants—wild rice was very plentiful in the lowlands of the river valley, and potatoes grew in quantities in the Pinconning River valley. There were also plenty of nuts and fruits, and the maple trees, especially along the upper tributaries, furnished sap for sugar. "The forests furnished the birch for canoes and wigwams, and to secure the flint for arrow-points, spears or knives, the aborigines had but to paddle to the vicinity of Bay Port to find plenty. Material for axe, chisel or tomahawk was abundant on the gravelly bluffs of the Flint, the Cass and the Shiawassee rivers."[1] The network of small streams flowing into these tributaries and also into the Saginaw itself, uninterrupted for the most part by rapids, furnished a quick and easy means of travel and communication. The dense forests and impenetrable swamps gave the Indians a safe retreat from the enemy.

As a result of these favorable conditions, the valley became one of the most thickly settled parts of the Great Lakes region. There were many villages on the Saginaw and its branches, and on other streams flowing into Saginaw Bay. Although the Indians would take surprisingly long trips for war or hunting purposes, their villages seem to have been quite permanently located. The largest villages were probably up the river where the several tributaries meet and form the Saginaw River. There were camping grounds, and meeting places for war and for religious ceremonies in the lower part of the valley, but no villages were located here. Along the bay, however, near the mouths of the Kawkawlin, Saganing and Pinconning rivers there were permanent villages.

The Chippewa is described as tall, athletic, copper-hued, and picturesquely dressed. He has the superstitions common to the Indian race. His god, or the Good Spirit, is Gitchie Manitou the Mighty, and the Evil Spirit is Matchie Manitou.[2] The early settlers found him more honest and reliable than the average white man,[3] though his character was changed by contact with the white people, and particularly by the white man's "firewater." Under its influence he became very dangerous.

Many writers have described the Saginaw Indians as quiet, peaceful, and very easy to get along with. This was probably true for the period of settlement, but before that time the Saginaw Indians were known as warlike, treacherous and very troublesome. They were very brave and could withstand great suffering without the slightest show of pain.[4] An incident in the life of the great and well-known Chief O-ge-ma-ga-to well illustrates this: "Once when two of the Chippewa Indians were fighting with knives and spears, O-ge-ma-ga-to jumped between them and received a knife thrust in his side. He lay very weak for quite a few days and one day—some say simply to show how brave he was, and others that he was so advised by the Indian 'medicine man'—he took a knife and cut a slice off his liver which was protruding from the wound, put it on fire and roasted it and ate it."[5]

[1] XXXIX, 253.
[2] Ridpath, VIII, 509.
[3] De Tocqueville, Memoirs I, 163, 167.
[4] See Chapter IX, for details.
[5] From an account by one of the pupils.

In matters of government, the Indians were quite democratic. The chief held his position because he was chosen by his people on account of being one of the bravest and wisest in the tribe. He did not even hold his position for life if he proved unworthy. The council held as late as 1865, mentioned in the first part of the chapter, was probably the one described in the following account, which at the same time gives some information regarding their election of chiefs: "From the viaduct to Joseph street, and between the river and Marquette street, the Indians camped. They came there to elect chiefs for each tribe. The white people were much alarmed, not knowing what they were there for. The women and children went over to the other side of the river to sleep, and for a time picket guards guarded the city. There was a party, consisting of Joseph Tromble, of Bangor; Mader Tromble, of the south end, and Father Schutjes, of the Catholic Church, who went to see the chief and wanted to know why so many Indians were gathered there. They wanted to know if they were going to massacre the citizens. The chief said it was all a friendly meeting for the purpose of electing a chief for each tribe. After their business was over, they quietly disappeared."[6]

The education that the Indian child received had to do mostly with the body and the character. The boy learned to shoot, trap, and swim at a surprisingly early age. He was taught to endure hardship without a murmur. He had to learn to make the canoe, bow, arrow, and other things needed for his future occupations. The girl learned to make mats, baskets, the rude Indian clothing, and to prepare the game and other food. They were all taught to have respect for their father and for old age. "Among their own, it was a great crime to steal or tell a lie, but to an enemy it was right to do so, for they must be injured whenever possible. * * * When a famous chief became too old to indulge in the chase, or to go on the war-path, he devoted his time to exhorting the youths of his tribe. In glowing phrases he would recount the great deeds of their tribe. Daily the children gathered about these aged chiefs among the tepees on the Saginaw, and DeTocqueville recites how they urged the young men to be brave and cunning in war, and to defend their hunting grounds against all encroachments."[7]

In their manner of living, the Saginaw Indians had about the same customs as most other North American Indians. "The Indians of this part of the country built their homes of skins and long, slender poles. If an Indian wanted to build a home for himself, he would save all the skins he could get. Then he would go out into the forest and cut down three or four saplings. These were long slender trees which were used by all northern Indians. He then cut all the small branches and twigs from the poles and stood them up for a frame work for his tent, fastening them with strips of leather or bark. He then covered them with the skins. He sometimes sewed designs on the side of the tent. Other Indians built their houses out of bark. They went into the forest and cut the bark off from several large trees and then built their home something like what we call a shanty. Many of them spread the bark on long poles in much the same way as the skins were used, forming a wigwam. These wigwams were small—most of the work, such as cooking, cleaning fish and animals for food, grinding corn, and so forth, was done outside."[8] On the floor of the dwelling were rush mats made by the squaws. If the fire was made in the wigwam at any time, an opening was made near the top on

[6] From an account by one of the pupils.
[7] Gansser, 39.
[8] Described in Gannser 42; *When Michigan was New,* 40

the side opposite the direction from which the wind was blowing from which the smoke could escape.

There were a few wooden or stone dishes, stone knives and skinning stones[9] for preparing game and fish for cooking, and the weapons were the usual bow and arrow, stone tomahawk and spear. Of course, after coming in contact with the white people they were quick to make use of the white man's weapons and implements of iron and steel—such as the gun, knife, dagger, and axe. But the stone weapons, crude and dull as they seem to us, were wonderfully effective when in the grasp of a skillful and powerful Indian brave.

The food of the Indian consisted of berries, nuts, potatoes and several other kinds of roots, corn, beans, squash, maple sugar, wild rice, and all kinds of fish and game. Herbs and roots of many varieties were also used, and with very good results, for medicine.

As for clothing, the Indians cared much more for ornament than for real clothing. "The garb of the males, during warm weather, consisted simply of a skirt covering the loins, while their heads were adorned with feathers of various hues. When the weather was cold, they usually wrapped themselves in the skins. The robes of skins were made in the form of a blanket to enable the wearer to readily cast it aside if the necessity of the chase or war should render it burdensome."[10] They delighted in showy or unusual ornaments, such as beads made from shells, feathers, snake skins, porcupine quills, and bear's claws.

Indian amusements, when separated from their occupations of hunting, fishing, and fighting, consisted chiefly in feats of daring, tests of skill and strength, and in various weird dances.[11] The flat, circular stones shown in the picture of relics were used in some sort of game.

The occupations of the Indians may be listed as hunting, fishing, fighting, manufacturing and agriculture. They were particularly skillful in the hunt and had many useful methods for trapping and killing the various kinds of game. They would cut the beaver dam and then wait in perfect silence for the beaver to come out to find out the cause of the trouble, when he would be easily captured. The bear was very desirable for the quantity of meat he would furnish, but they would not hunt him unless there were many Indians to help, for with their crude weapons they could not kill him instantly, and when wounded the bear was a very dangerous enemy. The circle hunt was used at certain times of the year for hunting on a sort of wholesale plan. A large number of Indians would form a circle over quite a large area and drive the game toward one place. Succeeding in this, they would then engage in a regular slaughter, rather than a hunt. By this method they frequently killed great quantities of game of many kinds in a very short time.

Preparation for war included religious ceremonies, applying the carefully mixed war paints, and examination of the weapons to see that they were in the best of condition. The braves would travel long distances, endure all sorts of hardships, and run great risks in order to satisfy their desire for revenge on some enemy. In case they returned with many scalps, showing a successful battle, they would celebrate with a great feast and war dance and with the torture of any prisoners that had been taken.

[9] See picture of Bay County Indian Relics, page 27.
[10] Wah-Sash-Kah-Moqua 113.
[11] Described in Gansser 42; *When Michigan Was New* 40.

Manufacturing was engaged in by both the braves and the squaws in connection with their other occupations. The squaws made mats and baskets of reeds and rushes, twine and fish nets from wild hemp, clothing from skins, and meal from corn. For the latter, a stone dish and round stone, similar in shape to the mortar and pestle shown in the picture of relics, or else a stone fitted into a hollowed stump, was used. The men made their various stone weapons. There was the bow, with its carefully chosen wood and strips of leather and as carefully fastened together; the arrow, which must be straight and of the proper length and weight, and tipped with a well-made stone head; there were also the spear, tomahawk, and war club, each of which required special skill and strength in the making.

As Indian travel in this vicinity, when not on foot over Indian trails, was on the streams in canoes, the making of the canoes was an important manufacturing process. In this the Indian showed great ingenuity. The canoes were light, long, narrow, and pointed at both ends. They were made of birch bark, or by stretching skins over a frame. Some dug-outs, or hollowed logs, were used. These were burned on one side and then the stone chisel[12] was used to take off the burned part, after which the process was repeated.

That the Indians engaged in agriculture on a surprisingly large scale seems to be proved by the records of the early French and English. One hundred and thirty years before the first settlement was started in Bay County, ten boats came from the French fort at Michilimackinac—near the present Mackinaw—to the "Saguinan" region for food.[13] In 1779 the English Commander of the same fort reported to his superior officer at Quebec, "I have sent to Saguina to endeavor to secure six hundred bushels of Corn for the Indians without which our flour will run short by the fall of the year."[14]

The squaw, who was usually little better than a slave, undoubtedly attended to most of the work in tilling the soil and caring for the harvest. She also had full care of the children. "The Indian people, the Chippewas especially, were very fond of their children. Before the babies could walk they were put in a basket and carried on their mothers' backs. The Indian baby was called a papoose. When the mother did not want to carry her baby she would take the basket off her back and stand it against the hut or a tree, and sometimes she would hang it on a bough of a tree. From this custom came the Mother Goose nursery song:

"Rock-a-by baby,
On the tree top,
When the wind blows,
The cradle will rock."

"Indian babies seldom cry. All Indian children, as soon as they started to walk, were taught how to paddle a canoe, fish and hunt. The child's parents were never afraid that their children were going to drown.

"In the Chippewa tribe when an Indian boy or girl was twelve or thirteen years of age he chose his own name. The morning on which the child was to choose his name, instead of his usual breakfast, there was a bowl of charcoal. The child knew at once

[12] See picture of Indian relics, in book but not reproduced here.
[13] XXXIII, 270.
[14] IX, 381; capitals and spellings are given as in the old letter from which this is quoted. See other references under Indians and Agriculture in the Appendix.

what this meant. He or she would go into the woods and fast until he went to sleep and whatever animal he dreamed of he was to take that animal's name, and this animal was to be his spirit."[15]

The following account shows with unusual clearness the difference between the Chippewa Indians before and after they had dealings with the white people:

"The mental as well as the physical Chippewa was high above the average American Indian. The outline of his face alone showed great mental ability and sagacity. He was kind and trustworthy so long as he was honestly dealt with. He was kind to his family and morally he was much superior to his white brother. His laws were made not to be broken, and the punishment was death. He worshipped his manitou with true devotion. He would go off into the forest alone to his sanctuary, and I am sorry to say that his white brother seldom realized the fine qualities of this man of the forest.

"Nature provided him with all of his wants. His wigwam was originally made of leather which had been tanned by his industrious squaw, and the inside was lined with the most expensive furs. His habits were quite sanitary as his little home was moved from place to place, so there were no such things as contagious diseases. His medicine man in reality used very little medicine and was in principle a mental healer. What few cases he had were speedily cured.

"In their wars between tribes they fought to a finish, generally in hand to hand conflict—but they did not use bombs, U-boats or gas, and instead of wearing an Iron Cross they wore their opponent's scalp. Please remember I am speaking of nature's Indians. I do not refer to those the white man made and contaminated with whiskey, immorality and disease, but to a people who lived in harmony until they were robbed of their land, their homes and their means of sustenance, after having lived the life of free men.

"In visiting an Indian wigwam his first salutation was 'Come in, brother, half I have is yours,' and this was no idle saying because he would share with you everything he had. But while he was intelligent and shrewd, he was no match for his dishonest white brother who held out his hand not in friendship but to grasp from his unsuspecting brother the beautiful forests, the lakes and rivers and productive lands all filled with game and fish which was the rightful inheritance of the Chippewa Indian." —Fremont J. Tromble.

Chapter XXIII

The People of Bay County

Of the native inhabitants of Bay County, the Chippewa Indians, there are very few left. Some live in the northern part of the county near the bay shore, most of whom are in very poor circumstances. The majority moved away to reservations at an early date, and the others suffered from smallpox, tuberculosis and other diseases to such an extent that but few have survived.[1]

Until about 1857 most of the settlers of Bay County were people who had been born in America. There were those of French descent from Canada and southern

[15] From an account by one of the pupils.

[1] "Wah-Sash-Kah-Moqua" contains an interesting account of life among the Saganing Indians from 1863 to 1897. On pages 131–140 Dr. Thomas R. Palmer tells of an epidemic of smallpox among these Indians.

Michigan, and those of English descent who came from southern Michigan or from the northeastern part of the United States.[2] The French settled in groups in the various villages, especially in Banks, where they engaged in the fishing industry, and in the northern part of the city on the east side of the river. A large number of New Englanders settled in Portsmouth and Lower Saginaw and engaged in business or manufacturing, or they made the beginnings in agriculture. Wenona was started in the early sixties and grew so rapidly as to make a great demand for laborers. These came from many sources, and the population was mixed from the start.

There was one group of actual foreigners who came to Bay County before the steady foreign immigration started. German immigrants located in Frankenlust township as early as 1848, and this fact attracted many others of the same nationality to that vicinity, including the village of Salzburg and Monitor township, in later years. It is an interesting fact that the year 1848, in which Rev. Philip Sievers, the Lutheran minister, and his followers came to America, there was a great revolution in Germany and in other parts of Europe in which the people were struggling to get some share in their government. In all probability these settlers came here to escape the evils of that government in which the people had no part, and which was causing so much trouble even them.

Since that time many other nationalities have been represented in the immigration into all parts of Bay County. Germans and Hollanders settled in Hampton township about 1857.[3] Beginning about 1872, many Polish and Jews have come from Russia and Germany to escape the cruel persecution and the bad living conditions resulting from the evils of wrong government. In later years people came from Sweden, Holland, Belgium, Austria, Hungary, and other European countries.

Distribution of Population

There was a strong tendency for these people to locate in the city and county in groups. Those speaking the same language and having the same religion and customs naturally wanted to be together. This is seen in the townships as well as in the city. The people of each nationality have their own peculiar characteristics, and each group adds valuable elements to our life. Some had been farmers, others laborers, and still others merchants. The majority of each would seek employment in their particular line, so that the county has had plenty of material to aid in the development of all the occupations.

The great majority of the people live in the southern part of the county. This is explained by the fact that the Saginaw river offered such a favorable location for towns, and was surrounded by fertile fields for the production of food supplies for the people in the towns. Besides this, it was long believed that the land in the northern part of the county, from which the pines had been cut, had soil that was poor and sandy—useless for agriculture. This land was even called by the unfavorable name of "pine barrens." There are more sand ridges than in the southern part of the county, it is true, but most of the soil is rich loam, and there is much better drainage than along the Saginaw river and the southern shore of the bay. Today these "pine barrens" are being occupied for farms and stock raising, and it has been suggested that some parts could be reforested with profit. There are nearly 5,000 people to the square mile in Bay City, and only 50 per square mile in the rest of the county.

[2] See page 83 (original text).
[3] *History of Bay County*, Gansser, pages 139–141.

Loyal Americans

The sincere and loyal character of our population in the period of the Civil War, when the country was fighting for the Union, is shown by the enlistments. "The children of 1842 were the young men of 1861 to 1865, and the noble precept and example of James G. Birney, the outcast from his native heath, the self-denying pioneer, were rewarded by their devoted service in times that tried men's souls. The records of the office of the Adjutant General of Michigan show that Bay County, during those four years, sent about 511 soldiers forth to the battle[4] of whom eighty-five died in service, while many more, from wounds and sickness, gave up their young lives after being mustered out, but before peace came to bless our land. When we find that the federal census of 1860 gave Bay County a population of 3,164 men, women and children, (5517 in 1864 or 1865) we can readily appreciate the sacrifices of men and money made by this community, that our nation might live one and indivisible."[5]

The response to the call of our country in the Spanish-American war was also prompt and enthusiastic. And today Bay County again shows its patriotism, not only by furnishing its full share or more in volunteers for active service, but also by responding to appeals for money and for other aid in a way that is exceeded by few places of equal population in the country. The new view that in a republic every citizen, not just those who are willing to volunteer, must share in the necessary dangers and sacrifices demanded in such a war, is accepted by the great majority in Bay County as a patriotic duty.

Living Conditions

There has been a steady development in the living conditions in Bay County, keeping pace with the changes made possible by modern inventions and discoveries. These improvements are, most of them, such that the laborer and farmer, as well as others, can make use of them and can have a modern home regardless of its size and location. The early conditions have been described to some extent already, and the change from those days seems remarkable. We smile now at the fact that cows were allowed to roam at large through the city streets, causing those who desired lawns and gardens to erect fences as a protection from the cattle. Then came the state law, planned it is said, by John L. Stoddard—after the city's mayor vetoed a similar rule passed by the Common Council—forbidding the pasturing of cattle in the streets of cities of over 10,000 population. A city pound was then established on Grant Street, between Sixth and McKinley, and later at Tenth and Johnson streets, to which the stray cows were driven. The owner could obtain his property by paying a fine, which included its board and lodging while in the pound. Gradually it has been possible to rid the city of the unsightly fences.

The kerosene lamp, introduced in the settlement by the Cottrells as a great improvement in the method of lighting, has long since been replaced for general use by gas and electricity. The first gas company erected its plant and laid pipes in 1868, at a time when houses were being built at the rate of from 400 to 500 a year, and electricity was introduced in 1882. Other conveniences, now greatly improved, were introduced quite early. For protection from fire, first arrangements were made about 1859. City water was provided in 1872, and a library in 1870. The first newspaper, the Bay City

[4] See *Michigan in the War*, p. 66.
[5] *History of Bay County*, Gansser, p. 348.

Press, was published as a weekly in 1856 for but a few weeks. It was edited by James Birney.[6] A more lasting start was made by the "Press," which was first published in 1859. Since then the city has been supplied with news by one and most of the time by two or more papers.

The first cemetery was established about 1840 in a sand ridge in the block bounded by Washington, Saginaw, Eleventh and Twelfth Streets. It was abandoned after the the Pine Ridge cemetery was established by James Birney. Many skeletons have been found there during the building operations in recent years. It is difficult to find out who was the first regular doctor in Bay County, as reports differ, but it is clear that after 1857 the county was well supplied. But hospital arrangements were lacking during most of our history. Until the establishment of the Mercy Hospital in 1900 it was necessary to rely on Saginaw hospitals for such service.

The "floating population" of Bay County in the lumbering days was very large. Men stopped here on their way to and from the lumber woods. Men without families came to work in the mills during the rush season. During the winter there were a great number of sailors staying here, waiting for the opening of navigation in the spring. Business men with interests in this part of the state and homes elsewhere had to be provided with lodging, and traveling salesmen have long made this their headquarters while visiting towns in northeastern Michigan.

For such people, hotels were established early in our history. The first frame house of the Trombles' became the River House, and later the Center House. In a later period the Astor House of Portsmouth was well known. In Lower Saginaw the home of Sidney S. Campbell was first used as a hotel, and was later enlarged by Rouech, 1862, and named the Globe Hotel. The Wolverton House was established at Third and Water Streets, the very center of the town, by J. S. Barclay in 1852. It was named after the first keeper of the lighthouse at the mouth of the river, and for many years considered one of the best hotels in this part of the state. The Fraser Hotel, erected by James Fraser, at Center and Water Streets, was a wonderful improvement of 1865 and 1866. It was destroyed by fire on Christmas day, 1906, but was soon replaced by the present Wenonah Hotel (1908) which ranks high among the hotels of the state on account of its beauty, its pleasant location near Wenonah Park and the river, while being at the same time in the heart of the business section, and for its excellent service.

Churches: After the religious services held in pioneer days by James G. Birney, churches of many denominations were established, one after another. Meetings would be held in Birney Hall, in the school house, or in the church building of some other denomination. The church services would be irregular, but the Sunday schools, directed often by a group of the ladies, held sessions somewhere every Sunday. As the church organization grew stronger, arrangements were made for a church building. The first church building erected for the purpose in the county, however, was not in the villages, but was near the banks of the Kawkawlin river at the Indian Mission. This building was erected in 1847 under the direction of Reverend Brown, a Methodist

[6] James Birney was the son of James G. Birney, and was for years one of our best known citizens. He was state senator, 1858–1860; Lieutenant Governor of Michigan, 1860; Judge of the Circuit Court in this district for the next four years; editor of the *Bay City Chronicle*, 1871 to 1876, and United States Minister to the Netherlands in 1876.

missionary for the Indians in that section.[7] The first churches in Bay City were all built on Washington Street, between Second and Tenth Streets.[8] This peculiar fact is explained by a provision made by the original Saginaw Bay Company in making its plat of Lower Saginaw. It set aside two lots in each of a certain number of blocks on Washington Street to be donated to church societies for buildings that must be erected under conditions approved by the directors of the company. One of these buildings, that of the Presbyterian church, is still in use as the Odd Fellows Hall, across from the City Hall. Later, as the city grew, Washington became a business street, and the churches sold their property there and built new and better buildings on their present sites.

Other Organizations: The Young Men's Christian Association was organized and reorganized several times before the present active association succeeded in erecting the modern and useful building that it now occupies. The first organization was in 1868, and rooms were rented in the Averill block on Center Avenue. This died from lack of interest. A new society was formed in 1885, and a building at the corner of Center and Washington Avenues was occupied until the purchase of a building on Adams, between Center and Sixth.

In a social and charitable way the ladies of Bay County made an early start. The newspapers of the sixties, give accounts of their activities, such as holding a grand May Day celebration in Birney Hall. In 1886 they established the Old Ladies' Home, and cared for the children in the same place until a building could be erected. The Young Women's Christian Association was organized in 1891, and up to the time that its new building was occupied in February, 1916, it had had five or six different temporary quarters. Now it is able to accomplish much good that was impossible without such a home. Today there are a number of other women's organizations, the real object of each being to improve living conditions of the city in every possible way. The Civic League, in which all of the women of the city are interested, is doing wonderful work by means of its many departments, and it is increasing its activities each year. At present it has the following departments: Visiting Nurse and Free Dispensary, which carries on a variety of work, including that of a sewing circle, children's Christmas cheer, anti-tuberculosis, and milk fund; Social Service, which attends to the collecting and distributing of food and clothing; the City Beautiful; Mothers' Club; Sanitary, and Junior departments.

Recreation: There have been wonderful opportunities for recreation and sport of all kinds from the earliest years in the settlement on account of the location near the river and bay. Men used to come here on their vacations from the southern part of the state for hunting and fishing trips. Summer resorts have long been popular along the bay shore, offering excellent bathing, boating, fishing, and other pleasures. There were organizations to assist the people to get the full benefit of opportunities for pleasure, at a very early date. In 1867 there were a Rifle Club, Nautical Club, and a Baseball Club. Men accustomed to handling logs often used to engage in water sports, such as log rolling contests, in which each of two men, balancing on a log, would strive to cause the other to lose his balance and fall into the river.

For many years boat races were held. There were contests between sailboats of all classes. Later, power boats were made here and some of the fastest launches of the country, such as the "Secret," have raced on the river.

[7] *History of Bay County*, Gansser, pages 142 and 272.
[8] See Appendix for the names and location of each.

The winter has afforded ice skating and boating on the river. There were skating rinks and toboggan slides. From twenty-five to thirty years ago tobogganing was very popular. Long flat coasters were used, and slides were built out Center Avenue. These were thirty or forty feet high, and produced a slide about two blocks long. A fee was charged for the use of the toboggans the same as for the skating rinks.

Parks: The Saginaw Bay Company, when platting their village of Lower Saginaw, had made provision for permanent parks. These are located at First and Washington, Ninth and Madison, and Center and Jefferson Streets. Later a much larger one, known as Carrol Park, was donated to the city by C. C. Fitzhugh. There is also a park on Broadway Avenue, but until recently no parks were provided on the west side of the river. A block has now been purchased for such a park at the corner of Midland and Williams Streets. One of the best sites for a park would be on the river bank, but no provision was made for one until 1908, when money was borrowed for the purchase and improvement of the beautiful Wenonah park. Several business blocks were torn down, the river bank was built up with material dredged from the river, and today it is a delightful spot near the center of our main business district.

Business Activities: The business activities of Bay City have kept pace with the industrial development. The first stores started by the Trombles and Captain Pierce were followed by numberless others, so that today the retail stores of the city rank with the best in this part of the state. Most of the very old firms have gone out of business, but there are a number that date back to the fifties and sixties. Among the oldest is the Jennison Hardware Co. C. E. Jennison, whose father had an interest in the "Governor March," the steamboat that came up the river in July, 1836, started business about 1850. The bakery of Frederick Arnold, at Fifth and Saginaw Streets, was established in 1856. In the directory for 1866 and 1867 are found the names of C. R. Hawley and S. V. Wilkin.

Banks: The first banking institution—the Bay Bank—was established in the village in the year 1863. This was reorganized the next year into the First National Bank. It was followed in 1869 by the State Bank and the Bay City Bank. The Bank of Wenona, which later became the Lumberman's State Bank, was organized in 1872, and the Second National Bank in 1874. The present healthy condition of our business and industries is shown by the remarkable increase in deposits each year, while the total resources of all of the banks run far into the millions—$19,011,278.45 in November, 1917, an increase of about $7,500,000 in one year.

An organization of the business and professional men who are alive to the needs of the city is needed for any growing community. The first organization of this kind in the county was started in 1865. It had "Keep Moving" for its motto.[9] But it evidently failed to keep moving, for it is recorded that a Chamber of Commerce was organized February 1, 1882, and that it accomplished much for the booming town. But by 1884 this, too, had "gone to sleep."[10] This sort of history probably repeated itself several times. Today, however, and for a number of years past, Bay City has had a very active, well organized, and efficient group of business and professional men. This "Bay City Board of Commerce" works continually for the improvement and development of the city and of this section of the state. It takes the lead in many matters of civic importance as well as in affairs of business. In addition to this there are some active and helpful sectional organizations of the business and professional men.

[9] Directory for 1868-1869, p. 15.

[10] Bay City *Tribune*—January 27, 1884.

VII

A BOOK OF LOCAL HISTORY

Another example of book-making which uses materials collected in part by pupils and in part by teachers is the volume entitled "*Real Stories From Baltimore County History,*" published by Warwick and York, of Baltimore, and edited by *Miss Isobel Davidson.* Some examples of the stories in this book are as follows:

British Consulate

"The Refuge of an English Exile, 125 Years Ago."

More than a century ago a British gentleman and soldier was banished from England, and he sought his refuge within a stone's throw of Baltimore. He was allowed to sail for these shores with the understanding of the British courts that he was to be lashed for one-half hour on a certain day of every remaining year of his life. The banished one was under careful watch of the British government, and the severe penalty imposed by the court was carried out.

Although this was more than a century ago, yet two Marylanders who witnessed some of the beatings are still living. The thrashings were brutal in the extreme, yet the exile stood them unflinchingly and insisted that they be imposed, as the order of the court could not be evaded.

The eye-witnesses to the 'beatings' are Thomas James McGill, eighty-six years old, 116 E. Montgomery Street, through whom the story came to light at this late day, and a colored servant, Marguerite Riley, 90 years old, who lives within a shadow of where her master, the exile, was lashed to a tree to receive the penalty of the court. The lash was applied without mercy, and the body of the exile was torn to ribbons on these occasions. The exile was no other than the brother of William Dawson, who is said to be the first English consul for the Maryland district, and who built the historic English Consul residence on the old Annapolis State road, in the Thirteenth district of Baltimore County.

The story of the exiled one was told by himself to Mr. McGill, who was then a lad of twelve years.

McGill's father had a farm near the Dawson mansion, and it was the duty of young McGill to pass by the historic place every day on his way to get spring water. He became acquainted with the exile, who was a bachelor, and who craved youthful company. One day, while seated under the tall, massive oak, to which he was bound to receive the order of court, Dawson imparted the history of his life to young McGill, but was careful not to divulge the reason he was banished from England. Dawson was then about fifty years old. "My son," said Dawson, "there is a day approaching that

is the saddest day in the year for me. I hope on that day that you will take another route for your water. You are but a boy and I cannot explain to you my secret, other than to tell you that I am an exile from my mother country, and I am to be lashed within a few days for a wrong that I committed in defense of my own honor."

Continuing, the exile said: "Through my parents' influence I was allowed to come to this country, but only with the understanding that I should be lashed every year. That day is approaching and I will pay a part of the penalty."

Young McGill's curiosity was aroused and he watched the Dawson mansion closely. Sure enough, about two weeks later he saw the exile bound securely to a tree, and the executioner of his sentence applying the lash with all of his vigor. The man who was putting on the lashes so unrelentingly was no other than McGill's own cousin, William Hawkes, who was paid $5.00 for doing the whipping. The exile shrieked with pain, yet he called to his castigator to keep applying the lash for the specified time. Dawson had many slaves, but they refused the task of beating their master, even when threatened with death. For nearly ten years McGill witnessed the scene of Dawson receiving his sentence. The Dawson mansion is one of the most historic buildings in the State. It was built for the exile's brother more than a century ago, and today it is in a good state of preservation. The old building is of typical Colonial design, and every piece of material used in its construction was imported from England. Each of the 17 rooms in the mansion is fitted out with fine gray Italian marble mantelpieces and open fireplaces made of heavy brownstone. The ceilings of all of the rooms are adorned with masterpieces of stucco work, and the solid silver door knobs and plates which were installed in the house at the time of its erection are still on the premises.

In the spacious dining room one of the first ovens built in this state by Henry Reip, who was then located at 8 Paca Street, is still in good condition. Mahogany banisters and railings abound throughout the entire house, and the heavy walnut floors and stairways do not show the least sign of wear. The mansion is equipped with a wine cellar and quaint old lockers that, when closed by their heavy doors, are as impregnable as a fortress. The doors of the building are of seasoned oak and five inches thick. The shutters of the mansion disappear in the walls.

The house has a frontage of 90 feet and a depth of 50 feet, the rooms being divided so that each one will front on a side of the house, affording a good view over the farm and giving plenty of light. An old suit of heavy armor, found in the wine cellar about fifty years ago, is now in possession of Colonel Franklin, of the British Army, who was a relative of Dawson.

The oak tree to which Dawson was lashed for his beatings still stands, and is one of the largest in the state, measuring 15 feet, 10 inches, around the trunk, reaching to a height of 175 feet. A large grove of oak, birch and sweet honey-bean trees surround the old mansion.

The old Dawson mansion is now owned by Otto Unger, private secretary to Collector of Customs William A. Stone. The historic home, once the retreat of two polished gentlemen, who lived in seclusion, is now being used as a modern home, and the fields that were formerly worked by a score of slaves are now the recreation centre for a large and happy family.

Jennie Ruhl

The Story of a Railroad

1828

Something was going to happen at Ellicott's Mills. Such a strange thing, too! Little Francis Ellicott heard about it every day, for all the people were talking of nothing but the new railroad. Not one of them had ever seen a railroad, but it had been settled that they were to have one, coming from Baltimore straight out to Ellicott's Mills, a distance of thirteen miles. Then the road would go on from the Patapsco Valley into the Potomac Valley at the Point of Rocks; and then, most wonderful of all, it was to wind its way over the mountains to the Ohio River. The road was to be called the Baltimore and Ohio Railroad, though it would be a long time before rails could be run all the way to the Ohio River.

Francis was enthusiastic about it, but there were many who shook their heads and said, "It can't be done!" The old gentleman who sat leisurely on his big front piazza would solumly shake his head and say, "The builders expect one horse to do the work of ten on the ordinary turnpike road. Even if the wheels of the coaches are to run on iron rails made fast to the ground, it can't be done!"

You see, it was all new and untried. Every one was familiar with traveling by stagecoach, by horseback, and by boat, but no one knew anything about traveling by rail. To be sure, up in Massachusetts something of the kind had been tried in hauling granite and coal, but, this, the fourth road of its kind built in the country, was the first built for both passengers and freight.

When Francis heard this, he sought out grandfather on the porch and said: "Grandfather, the new railroad is coming. What fun it will be to see the string of coaches with a horse in front pulling them over the rails! They will come faster than the stagecoach comes into the village, even when the stage driver cracks his whip, and blows his horn a loud blast."

Indeed, every one thought much as Francis did; even the men who planned the road did not dream of the iron horse which has come to draw our long, heavy trains across the country with such ease. It was not long, however, before Francis was filled with joy, for on July 4, 1828, the railroad was begun, the cornerstone was laid in Baltimore with all ceremony.

In the spring of 1830 the double track, which had been laid as far as the Mills, was ready for use. A notice that the line would be opened to the public and that the fare to Ellicott's Mills and return was seventy-five cents, appeared in the newspapers.

On that first morning a crowd gathered to await the incoming passenger train, our friend Francis among them. When at length a staid horse came trotting along, drawing after him the small but well-filled cars, Francis was the most disappointed lad you ever saw.

"Grandpa, it is just the old coach on rails. It doesn't go any faster than the coach along the turnpike," grumbled our little friend.

"Well, it makes enough noise to let us know it is coming, at any rate," said grandpa, with a smile.

Later in the summer something happened that was not all disappointing. One morning at breakfast Mr. Ellicott said: "Something is coming on the railroad today, my son, that you will wish to see. Don't miss it."

While Francis wondered how his father could take such an interest in the stupid railroad, he was on the watch with others to see what was going to happen. His father told him that a wonderful new horse was on its way. "A wonderful device, I am told," said his father. "I am most anxious to see it."

"What is it, father?" asked Francis.

"They call it a locomotive."

"A locomotive?" repeated Francis, wonderingly.

"Yes, a machine to take the place of horses in drawing cars," answered his father. "Mr. Peter Cooper has one built, and he is to try it today. You may remember that this is Mr. Cooper, who has copper works at Canton. Stockton & Stokes, I hear, will send the best horse they have, the big gray you admire so much, for a race with the locomotive. The machine is to draw a car and the gray is to draw another, running on the second track."

"Hurrah!" said Francis, "now for a race! Of course the gray will win, for every one says it is the finest horse in the world. Anyway, I am going to throw my hat in the air for the first horse that comes in sight.

"All right," replied the father, excitedly. "Toss your hat, then, for the first locomotive in America that has drawn a passenger coach, for here it comes!"

Francis never could tell afterwards just what his picture of a locomotive had been—something rather like a horse, perhaps—but certainly nothing like that queer little black machine about as large as a good-sized chaise.

"What makes it go?" he asked his father, in utter amazement.

"Steam," was his father's unsatisfactory answer. He had watched the teakettle on the stove, with the steam puffing out, but never anything like this happened. The teakettle did not go jumping over the stove. How could steam move that strange black object along the track? It was strange, indeed, but here it moved—this iron horse, at a rapid rate—drawing behind it a car filled with directors of the railroad and their friends.

The gray horse was forgotten in the excitement, and every one was curious to see the locomotive. Francis walked down to the end of the line with his father, where a great many people were crowding around the little engine as it came to a stop at the close of the first half of its trial trip.

The little train had come around the curves at the rate of fifteen miles an hour, and at its greatest speed had covered eighteen miles an hour. Some people were of the opinion that the speed could not long be endured, that being whirled along at such a pace would bring disaster. But every one on board the car seemed very happy.

Mr. Cooper was a happy man that day, and every one congratulated him upon his success. A gentleman had written in his memorandum book while the train was going at top speed this sentence: "A revolution has begun. Horsepower is doomed!"

Francis looked at the locomotive—first on one side, then on the other. It did not look much like the monster iron horses of today; rather like a toy beside them. The whole engine weighed about a ton, had four wheels, and, most of all, its boiler, about as large as a flour barrel, stood standing straight up in the air instead of lying on its side, as in the engine of today. This little engine was named the "Tom Thumb," and every small boy who saw it that day decided he would be an engineer and run an engine just like this one of Peter Cooper's.

But what of the race? Francis was sitting on the porch at home before he thought of the gray horse. "Didn't the horse come?" he asked of his father.

"One of the gentlemen told me," answered his father, "that they expected to meet him somewhere on the return and to race from there to town."

The next day Francis heard about the race. It seemed that the horse did meet the returning engine at the Relay House, where the race began. While the engine was getting up steam the horse gained upon it, and he was perhaps a quarter of a mile ahead when the excitement began. This is the story of the race, as told by Mr. Latrobe, one of the members of the party:

"The safety-valve began to scream and the engine began to gain. The pace increased, the passengers shouted, the engine gained on the horse, soon it lapped him—the silk was plied—the race was neck and neck, nose and nose, then the engine passed the horse and a great hurrah hailed the victory. But it was not repeated, for just at this time, when the gray's master was about giving up, the band which drove the pulley, which drove the blower, slipped from the drum, the safety-valve ceased to scream and the engine began to wheeze and pant. In vain Mr. Cooper, who was his own engineman and fireman, lacerated his hands in attempting to replace the band upon the wheel; in vain he tried to urge the fire with light wood; the horse gained on the machine and passed it; and although the band was presently replaced the horse was too far ahead to be overtaken, and came in winner of the race."

Although the horse reached town first, the victory really belonged to the locomotive. There were no more trials of speed between horse and steam power. In less than a year the Baltimore and Ohio gave up the use of horses altogether, and in less than ten years there were about three thousand miles of track in the country.

Our little Francis Ellicott, grown to a man, visited the Centennial at Philadelphia in 1876, and there saw an engine weighing fifty tons. He thought of the "Tom Thumb" and laughed. "The steam locomotive has about reached its limit," he said to himself. His son, Francis Ellicott, saw in St. Louis, in 1904, a freight engine which weighed two hundred and thirty-nine tons. He contrasted the monster with the picture his father had of the "Tom Thumb" of 1828, and glanced to the new electric locomotive not far away. Smiling, he said to himself, "The steam locomotive has about reached its limit."

Adapted—Stone and Fickett, *Days and Deeds a Hundred Years Ago.*

Isobel Davidson

VIII

LESSONS IN LOCAL HISTORY AND GEOGRAPHY

The local environment of the school, both physical and social, is sure to yield abundant material if teachers will only follow the examples given in the last two sections, where it was shown that whole books can be compiled. That there is not enough for a book need not discourage anyone. Single lessons added to the material in ordinary textbooks will always help to enliven instruction.

In this section some examples will be given of such single lessons dealing with local environment.

MATERIAL FROM BOWLING GREEN, OHIO

The following represents in outline a part of what the third grade of the Training School of the State Normal College at Bowling Green, Ohio, is doing. The material for this course of study was gathered and formulated by *Miss Effie Alexander*, formerly Third-Grade Critic in the Training School, now Primary Supervisor in the schools of Adrian, Michigan.

Indians of the Maumee Valley

How did this country look when the first white settlers came?

Visit a near-by woods.

How did the natives live?

Homes: Located near streams, springs and lakes. Tepee made by sticking poles in ground, fastening them together at top and covering them with bark, skins and branches of trees. Mats made of rushes, tough grass or moss. Opening left at top for smoke to escape. Cabins made for more permanent homes were about one hundred feet long and fifteen or twenty feet wide. They were covered with bark and sometimes mud was placed over it. If all couldn't sleep on floor, staging was built five or six feet from floor along length of cabin. Cabins built for summer use resembled arbors. They had neither windows nor chimneys. Openings left in roof above fires. Two families used one fire in common. Piece of bark or skin was used as door. Foliage of trees and grass placed on ground was sometimes used as bed. There was no furniture.

Food: It was mostly meat secured by hunting, trapping and fishing. It was partially cooked in dishes made of bark. Meats and other foods were placed with water in dishes. Hot stones were dropped into dishes to cook food. There was no salt for

seasoning. Bear meat was liked best because of great amount of oil it contained. Deer, raccoon and turkey were also eaten. Eggs of wild fowls, wild fruits, nuts, beans, roots, corn, bark and buds were eaten. Corn was cooked on cob; or ground between two stones, mixed with water and baked on hot stones. Cooking dishes were never washed. Meats were preserved by smoking and drying.

Clothing: Winter clothing for men and women was practically alike. It was made by joining together skins with tendons or stips of leather. Clothing hung from shoulders, or over one shoulder and under other and extended to knees. Belt was usually worn. Front of garment was pouched above belt to form pocket. Snowshoes, leggings, moccasins and sleeves were worn in winter, but removed upon entering wigwam. Little clothing was worn in summer.

Manners and Customs: Belts, necklaces, and bracelets made of round clam shells or from porcupine quills were highly prized. They tattooed with thorns using charcoal mixed with grease. They painted all or parts of bodies to frighten enemies or give courage to themselves. Both sexes wore earrings, and sometimes rings in nose, made of mollusk shells or other bright objects. Ornaments of shells, stones, bones, bird claws, etc., were worn.

Amusements: They played straws, a game somewhat like our game of jackstraws, and a game which is source of modern game Lacrosse. Another game, known as 'dish,' was played with plum seeds which had been darkened or carved on one side: seeds were placed in dish, shaken, turned out and number of seeds with dark or carved sides up counted. One having most dark or carved sides up won.

Personal Habits: Water for bathing was not in favor. Food was eaten from hands. Hands dripping with grease were wiped on hair or clothing. When very dirty they were wiped on shaggy dog or rubbed with powdered wood. Nails received no attention. Vermin abounded on bodies and in wigwams.

Making of Fire: Fire was made by striking two hard stones together with glancing strokes over material which would catch sparks and serve as first kindlings, or by rotating dry stick rapidly back and forth between hands, one end being pressed against dry stone or stick.

Religious Belief: They worshipped bones of dead. Feasts of dead were given. To these were brought bones of as many dead as possible. Presents were offered them. Dancing and chanting were done to accompaniment of drums and rattles.

Warfare: Maumee Indians were revengeful and would go to war on slightest pretext. They went in bands, tribes or combination of tribes. Their weapons were bows and arrows, javelins or spears, stone axes and tomahawks, and clubs made of wood. These were usually carried in belt or skin quiver. Sometimes shields and armor were used. Captives were used as slaves and treated cruelly if they belonged to hated tribe. Captive children usually received good care. Scalps were kept as trophies of war.

Industrial Activities: Women put up lodges or wigwams, dragged their belongings from one place to another, gathered wood for fire, found water, prepared food, raised crops, prepared skins and made them into clothing, did much fishing, often made and repaired canoes, made snowshoes and utensils, and brought game from place where it was killed. Men hunted, fished, went to war, and sometimes built canoes.

The following is an outline of what is done in local history by the fourth grade in the Training School of the State Normal College at Bowling Green, Ohio. The material for this course of study was gathered and formulated by *Miss Margaret A. Lemon*, formerly Fourth-Grade Critic in the Training School.

Settlement of Bowling Green

Hull's Trail: First white men to come through forest where Bowling Green now stands were Hull's army. They were marching from Dayton to Detroit and passed through about where T. & O. C. track lies. This became first wagon trail through interior of Wood County. It was only one for two decades.

Purchase of Land: United States bought land from Indians at price slightly less than four cents per acre. Treaty was made with Indians at foot of Maumee Rapids in 1817. Surveyors were sent two years later.

Swampy Land: Because of Black Swamp and attendant unsanitary condition settlement was slow.

Drainage: With drainage of land agriculture developed, land increased in value and health conditions improved.

First Settler in Bowling Green: Elisha Martindale bought forty acres of land directly west of and adjoining present fair grounds. "He built his cabin where the present Fay House stands near the great willow tree just west of the road."

How Bowling Green Received its Name: Settlers petitioned for postoffice. Gordon, who was mail carrier and passed through an old army trail once every two weeks, had carried mail when only seventeen through Bowling Green, Kentucky. In return for tumbler of cider he suggested this name as appropriate to surrounding landscape.

The First Store in Bowling Green: Locke's Store opened in small room in corner of White Hall Tavern, west side of Main Street, just north of intersection of Liberty Street. Robert Mackey had been licensed to sell goods and had opened store on Napoleon Road, but had not succeeded.

The First School in Bowling Green: First school was held in partially completed Thurstin cabin and lasted six weeks. Thurstin cabin is described thus: "A log structure 15x20 feet in floor space, chinked with mud and covered with shakes held in place by weight-poles." Sports at noon and recess consisted of playing around in brush, swinging on grape vines, killing snakes and chasing squirrels. Pupils used whatever books family happened to have. "One brought a Testament, another a history, another a spelling book, another the Life of Marion."

Discovery of Gas and Oil: Land increased in value from ten, twenty-five and fifty dollars per acre to two hundred fifty dollars per acre. Influx of settlers from Pennsylvania and other gas and oil regions resulted. Hammersburg well was drilled soon after influx of people. Methods of transportation of oil have changed since then.

The Fire Department: First body of fire fighters had only simple fire apparatus with which to fight. Early fire department developed slowly into present department.

The Pioneer Railroad: Branch railroad was built to Tontogany. First train was called "Old Huldah." Railroad has been improved much since.

Stories from Evers' *Pioneer Scrap Book:*

Going to Mill.
A Noted Bear Hunt.
The Last of Big Game.
Turkey Foot Rock.
Siege of Fort Meigs.
The Old Exchange Bell.

Reference Books:

The Pioneer Scrap Book of Wood County and the Maumee Valley—Evers.
Historical and Biographical Record of Wood County—Beers and Co.
A History of Northwestern Ohio—Winter.
Benjamin of Ohio—Otis.

MATERIAL FROM OMAHA, NEBRASKA

The following reproduces a portion only of a pamphlet published by the *Bureau of Publicity of the Omaha Chamber of Commerce.* It is illustrated in the original with a series of interesting half-tones and suggests a method of publishing and distributing material which may very well be imitated widely.

The Live Stock Industry in Nebraska

By Miss Ella Knight, Teacher of Commercial Geography
Saunders School, Omaha, Nebraska

Think of a city having a capacity for housing 185,000, with a population of more than seven and a half millions in a single year! Nine days would be the average length of residence; forty times each year, the city would completely empty and refill. The Union Stock Yards of Omaha is just such an unresting community, and the visitor looks down into the noisy pens and wonders at the organization and management evident through the stir—wonders how men's minds have met the challenge of such vast numbers in working out the details of providing food, shelter, sanitation and transportation.

From what scattered regions have the animals been collected? How have they been brought with proper care, to this place? Why has this particular market, situated in a region of comparatively recent development, come to hold rank as one of the foremost of the world's great markets? What demand necessitates the yearly collecting of these millions? What wise dreamers held the vision of a great industry, enduring failure and disappointment until success was their reward?

As Commerce has, for more than four hundred years, followed the prophecy of Columbus toward the west, so these questions find their answer in the grassy rolling plains and deep rich soil of Nebraska and the country to the north and west.

When white men first came to the wide central plains, they found that they could not possess the land until they had won it from the Indians and the wild animals. Gradually the Indian was conquered and dispossessed of his idle heritage; the bison

became practically extinct; the wild cattle have been adapted to the uses of civilization, and their strain has been much improved.

Cattle Raising

Nature has always provided bountifully for grass-eating animals ranging on the plains, and the farmer found in cattle raising on the cheap lands of the arid short-grass regions, a business to which he might bring small capital and large energy with most encouraging results.

Irrigation, better methods of farming, and the increase in the number of farms have decreased the number of range cattle, but have very largely increased the number of cattle raised in the state. The free range and the annual round-up have, in considerable measure, given place to diversified farming and the feeding of stock. Hay is planted with the small grains and takes their place in the second year, thus helping to renew the fertility of the fields; the refuse of beet sugar is a valuable cattle food; and in the price paid for the higher grade of stock, the farmer finds justification for his change of method. The dairy cow has won recognition for the state and has helped Omaha to lead the world in the production of creamery butter, but the dairy cattle are less than 25% of the total number, and about 30% of the value of Nebraska cattle.

Hogs

Hogs outnumber cattle by more than a million head and represent in wealth slightly more than one-third the value of cattle. In its native environment, the hog lived in the forest and throve on the concentrated food of nut and acorn. Consequently, although he could not subsist on the native grasses of the plains, the farms of this region yield him a most satisfying substitute for his original food, and the corn belt leads the world in the production of hogs. Corn and barley are especially suited to his needs, and since corn yields the larger amount of grain to the acre, corn is the cheaper food. There is said to be no county in Nebraska where corn is not a profitable crop. In parts of the state remote from the market, the farmer uses his grain for feeding, relying for his income on the sale of his stock. It is estimated that fully one-third of the American corn crop is marketed in the form of pork.

For a time, hog cholera threatened the farmer with the double loss of his corn crop and his hogs, but science has allayed his fear by producing a preventive for the disease. If the live stock receipts of the local market may be taken as an index to the farmer's encouragement in hog raising, we have strong evidence. In the nine months ending September 30, 1918, Nebraska farmers shipped to Omaha over 200,000 more hogs than they had shipped during the entire year of 1917.

Sheep

The sheep, an animal peculiarly adapted to the range, has received comparatively little attention from Nebraska farmers as yet. It is a good climber in rough, hilly country, can travel far for water or food, is well suited to high altitudes and arid regions, and by its close cropping can live on very short grass. It is, therefore, well adapted to sparsely settled country where farming is extensive rather than intensive. In the days of range feeding, the cattle man resented the coming of the sheep herder because the sheep often destroyed the roots of the grass by close eating, and the cattle must find food elsewhere. However, the same conditions which have convinced the farmer that

farm-fed cattle are more profitable than range cattle, are inducing him to install feeding-lots for sheep, and there seems to be a rapid increase in the number of sheep on Nebraska farms.

Back of the great Omaha market, handling annually its millions of head of live stock, are the farms with their millions of animals and in them we find the source of the market's supply. According to the live stock estimate made by the United States Department of Agriculture in 1915, the number of head of hogs, cattle, sheep, horses, and mules, was 639% of the population of the state. When we look for the farmer's incentive in turning the range into cultivated fields, and seek the reason for increased prosperity through vastly more expensive methods of farming, we find the farmer's eyes turned toward the market.

Beginning of Omaha Market

Up to 1884 no live stock stopped at Omaha, except what was taken from the cars to rest in transit to Chicago or points farther east. For several years, efforts had been made to establish a market here but without success. "In 1883, the Union Stock Yards Company was organized and entered upon the task of building up a live stock market," says Mr. Carl A. Smith, traffic manager of the Yards. "At the time of the organization there was no settlement at the present site of South Omaha which was selected for the establishment of the stock yards and which was at that time known as the Drexel Farm about five miles south of the city of Omaha.

"Associated in the enterprise were some of Omaha's foremost citizens, the names of whom will continue to live in the history of the city's great benefactors. Among them were William A. Paxton, John A. Creighton, Alex Swan, Thomas Swobe, P. E. Iler, J. A. McShane, and others. These gentlemen had unbounded faith in Nebraska and the West, and were not afraid to back it with their energy and their capital in their desire to promote the interests of their state.

"At this particular time the stockmen were clamoring for a nearer market for their cattle, hogs, and sheep; for there was only one market which was at all accessible to the stockman of the west, namely Chicago. Although considered a western market and the only one of importance so far as the western shipper was concerned, Chicago was a long way from the range man, and the settlers who were pushing westward in their eagerness to acquire cheap lands were becoming factors to be considered in the live stock business.

"The long journeys necessary to reach Chicago and eastern markets—for there were some shippers who marketed their stock in Buffalo, Cincinnati, and Jersey City—in those days had become great hardships, and they longed for the time when they might be able to market their products of the range nearer home.

Growth of Omaha Market

"Omaha, by reason of its accessibility, offered an ideal location for a live stock market, being the natural gateway between the consuming and producing sections. The importance of location has been more and more emphasized as the years have come and gone, in the settling of the west.

"The Yards were built and in August, 1884, were opened for business, but for a considerable time they remained merely a feeding station for stock enroute to eastern markets. Being located on the natural route from the west to the east—the beaten

trail, so to speak—of the stockmen going to and from market, Omaha's natural advantages were easily advertised, and as the volume of stock which stopped at the Omaha market for feed and rest increased, it at length began to draw buyers and dealers.

"First came the speculators and traders, some of them being shippers themselves; then feeder buyers, countrymen and farmers looking for cattle and sheep for feeding purposes; then buyers seeking supplies for outside packing houses, and finally the packers themselves, one by one."

Packing Houses

In 1884, nearly a hundred thousand head of live stock were received, 88% of which were reshipped to other points, indicating that as yet Omaha was but contributory to more firmly established markets. Within the next year, the market received a powerful impetus when the Hammond Packing Company was induced to begin business in a small slaughtering plant built by the Stock Yards Company. In 1885, nearly 300,000 head of stock were handled and only 57% were reshipped. These numbers have increased steadily, until in 1917, 116,949 cars unloaded at the Yards more than seven and a half millions of head of live stock, of which number about 60% were bought by the various packing companies.

"This great live stock market," says Mr. Smith, in 1918, "now boasts ten packing plants, four of the largest firms and six smaller concerns with two more building, creating a demand for stock that is unequaled on the Missouri River."

An increasing tendency has been shown by the farmers to the north and west to adapt their land to the raising and fattening of live stock. Fifteen or twenty years ago, western Nebraska, western South Dakota, and Wyoming made up a typical range country. In the long severe winters there was great loss of life in the herds; marketing must be done almost entirely in the fall months; and cattle must be fattened before they were ready for packing. The introduction of irrigation, the planting of alfalfa and corn, and providing shelter for his stock, have enabled the farmer to ship to market, sleek, well-fed animals, and to market them throughout the entire year.

[The pamphlet proceeds with transportation, equipment of yards and other items.]

MATERIAL FROM SUPERIOR, WISCONSIN

The following contribution from Mr. J. A. Merrill of the State Normal School, Superior, Wisconsin, will serve still farther to illustrate the possibilities of developing lessons from local material.

The Geography of Superior

The City of Superior is situated at the western extremity of Lake Superior, at the head of navigation on the Great Lakes. It has an extraordinary harbor, fifty miles or more in extent, at the mouth of St. Louis River, made by a natural breakwater about nine miles in length. This breakwater is a narrow sandbar built by the waves, from the north shore to the south shore of Lake Superior. It has two openings, an artificial canal cut through Minnesota Point, opening the harbor of Duluth to the Lake traffic, and the so-called natural entry to the harbor of Superior, which is the outlet of the St. Louis River.

The harbor has been improved by the United States Government, so that it will accommodate the largest lake boats, carrying 10,000 to 12,000 tons of ore or coal. The land around the city is rather low, with very gradual slopes from the south and west, which makes the city easily approached by railroads from all directions. Being in the line of east-west traffic, it receives and transfers all kinds of freight to and from all points from the Atlantic to the Pacific Oceans.

History of the Development of City

Rumors of the existence of a perfect harbor at the head of Lake Superior brought an investigating committee from Congress, and a favorable report about 1850. Before the port could be utilized, however, it was necessary to build a canal around the rapids in Sault Ste. Marie River, as it was impossible, without such a canal, for a boat to pass into Lake Superior. A few people had gathered at Superior before the completion of the canal about 1854. This canal, known as the "Soo" Canal, has been enlarged several times to accommodate the traffic desiring passage.

The first great increase of business to Superior came with the opening of the Red River Valley in the Dakotas and Minnesota for the successful raising of wheat. This brought immense quantities of wheat to the head of the lakes for shipment and resulted in the building of elevators and flour mills. In the amount of grain handled, Superior ranks first in the United States and is next to Minneapolis in the amount of flour produced.

Railroads early sought the place to combine with water traffic, and as a railroad center Superior has had a rapid growth. Five trunk lines, with many branch lines, principally from the west and south, have been built into the city. Four of them have their terminals and shops in the city.

The opening of the great iron mines in the Mesabi and Cuyuna Ranges greatly increased the business and at present there are three ore docks in the city, one handling ore from the Mesabi Range and two others ore from the Cuyuna Range. This ore is all shipped to lower lake ports, principally to ports on Lake Erie, where it is manufactured into iron and steel.

Manufacturing began early in the history of the city and is now growing rapidly.

The population of the city in 1890 was 12,000; at the present time it is estimated at 60,000.

Commerce of the Port

As might be expected from the facilities outlined in the preceding paragraph, the commerce of Superior is very great when compared with other cities of the country. Superior, with its twin port, Duluth, has a greater registered tonnage of traffic than any port in the world, except New York City and possibly London. This commerce comprises mainly the following activities: lumber from the far west, wool from Montana, wheat and other grains from the Dakotas, Minnesota and Canada are received and shipped to lower lake ports and thence to manufacturing or export centers. Iron ore is received from the iron ranges in Minnesota and is shipped to lower lake ports, prinpally to the Pittsburgh district. Out of about 34,000,000 tons of ore shipped from the Duluth-Superior harbor in 1918, about 15,500,000 were shipped from Superior. Copper about 21,000 tons in 1918 was shipped to lower lake ports and to coast cities for manufacture and export.

Although the volume of freight going down the lakes is great, the return traffic is considerable also. Anthracite and bituminous coal are brought up the lakes, about 11,000,000 tons in 1918 to Duluth and Superior, of which about 6,500,000 were received at Superior. Heavy shipments of oils, iron products, salt and general merchandise are received and distributed south and west.

Manufacturing

The first great industry at Superior was the lumber industry, which has passed with the using up of the great forests of white pine. However, the manufacture of furniture, especially chairs, is still one of the greatest industries of the city. In one factory there are 850 styles of chairs made which are shipped to the northwest, west and southwest.

Shipbuilding is the largest industry. There are three plants, employing about 5,000 men and turning out ocean, as well as lake steamers. Machine building, such as gasoline engines, boilers, windmills, capstans, derricks, has created a number of substantial industries.

Electrical specialties, like dynamos and telemotors (electrical steering machines), are manufactured here and sent all over the world.

Other manufactures, dealing with railroad switches, farm tractors, mattresses, and the refining of petroleum and many others of importance are located here and are growing rapidly.

Water Power

About twenty-five miles up the St. Louis River there has been developed a water-power plant furnishing about 65,000 horse-power of electrical energy to Duluth and Superior. This power is transmitted to Superior and used in practically all of the manufacturing plants of the city.

IX

LESSONS AMPLIFYING THE ORDINARY TEXTBOOK ACCOUNTS FOUND IN GEOGRAPHIES

The extension of investigations beyond the local environment is fully justified when one considers on the one hand the meager statements of the ordinary textbooks on geography and on the other hand the overwhelming mass of material which is available in government reports, in magazines and interesting books on travel. Any child is interested in other countries provided content is put into the study, but he will have a very cramped notion of the world unless he is carried beyond the condensed sentences and paragraphs in which the textbooks try to sum up in the least possible space all that is known. There are several types of this material which have been sent to the Committee that compiled this *Yearbook*. First, there is the complete descriptive account of some country or geographic unit, ready to put into the hands of pupils. Second, there is the complete organization of a series of related geographical problems, ready to be put into the hands of pupils; and third, there is the exhaustive outline with full references for the development of a series of geography lessons.

ILLUSTRATING A DESCRIPTIVE ACCOUNT OF A GEOGRAPHIC UNIT MATERIAL FROM SPRINGFIELD, ILLINOIS

Outline for Type Study of the Netherlands

By *Miss Myrtle Kaufmann*

I. We study Holland because it stands out clearly as a type in the following ways:

1. The country is almost entirely below sea-level.
2. It shows what the activity of a people can do in overcoming geographical influences.
3. The people and the country itself are very interesting and different from others.
4. It has an enormous population for its area.

II. The children will state the problem of the Netherlands after having seen that:

1. The population is very dense.

2. The area for such a vast population is very limited.

III. Some of the possible means of support for a small country with such a vast population might be:

1. It might increase its area.
    (a) This could be done within the country.
        (1) By securing adjacent territory.
        (2) By building up new land through the aid of canals, drainage and other methods of land reclamation.
    (b) This could be done without the country.
        (3) By securing distant colonies.
            (a) These might be useful in furnishing raw material and food as well as a market for manufactured products.
            (b) The colonies might afford a place to which immigrants could be sent.
2. It might develop intensively its present resources.
    (a) The most improved methods in agriculture might be used.
    (b) The most fertile lands might be used for intensive farming.
    (c) The higher and less fertile lands might be used for grazing and for breeding of the most profitable animals.
    (d) The manufacture of articles, the making of which requires a high degree of skill, might be an aid.

IV. Let us see if the industrial pursuits in which Holland is engaged will help in solving her problem.

1. We shall look first at agriculture.
    (a) To what type of products is she adapted?
    (b) What are the conditions favoring it?
        (1) Surface.
        (2) Climate, seasons, temperature, rainfall.
        (3) Soil.
    (c) What are the conditions limiting it?
2. Next we shall look at grazing.
    (a) What are the characteristics of grazing lands previously studied?
    (b) How is Holland fitted for this industry?
    (c) Why not use this method of solving her problem entirely?
3. We shall next consider fishing.
    (a) What circumstances encourage fishing as an industry?
        (1) There must be good fishing within reach.
        (2) An insufficient quantity of meat might lead to this industry.
        (3) There must be a demand outside its own market.
    (b) To what degree will the fishing industry help the Netherlands in the solution of her problem?
4. Next we shall look at her mining pursuits.
    (a) Considering the surface and the geological history of the country, do you expect this to be a large industry?
    (b) What corrections or verifications of your conclusions do you get from your readings?

5. Another thing we shall consider is manufacturing.
    (a) What is necessary in order to carry on manufacturing successfully?
        (1) Holland has a favorable commercial location.
            (a) It can easily import raw materials.
            (b) It can easily export finished products.
        (2) It has the power with which to manufacture.
            (a) There is a steady wind power.
            (b) Coal may be easily obtained for steam and electricity.
        (3) It has so many people that much hand labor can be employed.
            (a) Do you anticipate skill on the part of the Dutch?
            (b) They have handed down the skill and trades learned from the refugees.
6. Lastly we shall look at the commercial pursuits.
    (a) What conditions favor commercial enterprise?
        (1) There must be a market for products which are exchanged for other products desired.
        (2) There must be highways for trade.
            (a) Holland has the access of oceans from without.
            (b) She has the canals for easy transportation within the country.
        (3) There must be good ports and harbors.

V. Considering the enterprise which we have seen brought about by the Dutch, what shall we think about them as a people?

1. What has been the effect of the geographical influence upon their character?
    (a) Their constant struggle with the sea has made them brave and independent.
    (b) It has made them hospitable and kind to refugees.
2. How have the physical conditions affected their habits?
    (a) They brought about their thrift and cleanliness.
3. How have their influences affected their dress?
    (a) Their quaint dress and wooden shoes show this plainly.

Leading Thought: The development of a people depends largely upon the geographical influences of a country.

The Netherlands

If we were to visit Holland, we should find it a strange country, different in many ways from any other which we have studied. Our first impression, upon travelling through it, would be one of vast levelness. The whole surface is nearly as level as the floor of our school, and there are no hills, or stones, or dashing water falls. Everywhere throughout the country are scattered flat meadows covered with the thickest greenest grass that one can imagine. Almost the entire country is below the level of the sea. The lowest part of Holland is on the west bordering the sea. With the exception of the narrow strip of sea-dunes which have a mean height of thirty feet, nearly a quarter of the surface of the country lies below, while about as much more lies between sea-level and

three feet above. About fifty per cent of the surface would be overflowed if it were not protected by the dunes and dykes. And it was no easy matter for the Hollanders to keep the sea from overflowing this vast portion of their country. For, long years ago, where Holland now is, there was a great ocean. The Rhine, the Scheldt, the Meuse, and many other smaller rivers carried their loads of silt, much of which came from the mountains of the south, into this great ocean. This soil was deposited in the shallow water at their mouths and the winds and waves piled it up in hills or dunes, not very far from where the shore of the continent is today. Between these dunes and the mainland lay a large sea. But after many ages of deposition by the rivers, the land began to appear above the surface of the water, gradually extending the shore line seaward and leaving large lakes in many parts. But the ocean did not give up a part of its territory without many bitter struggles. Time and again it swept over the land in terrible floods, destroying farms and cattle and villages. One such flood in the fifteenth century covered thousands of acres and destroyed hundreds of villages. After each disaster the sturdy Hollanders tried harder than before to protect their precious land. Strong earth walls, called dykes, were built to keep out the sea, and huge windmills were built to pump out the water which accumulated in these enclosed lands. Canals were dug; the windmills pumped the water into them and the land was finally drained dry enough for use. These reclaimed portions were called "polders," and every polder which was made was a victory of the persevering people over their enemy, the sea. The work went on little by little; every year more dykes were built; more windmills pumped out the water; and more polders, of fine farming land, were added to the area of the country. We have learned in our study of other countries that the industrial life of any place depends very largely on the forces of nature which are always at work in this great world of ours. In our study of Holland we shall see what the activity of the people has done in overcoming these geographical influences and the changes which have been wrought.

The Netherlands is a very small place, being only one and a half times the size of Massachusetts, with about twice the population. The area of Holland is 12,728 square miles and it has a population of 5,104,137. The population is about one hundred twenty-five per square mile. However, the Netherlands is very different from Massachusetts, for, as we have said, it is very level, while Massachusetts is very hilly and rough. More than half the people of Holland live on farms, while three-fourths of the people of Massachusetts live in cities. In Holland there are more than two million cattle, while in Massachusetts there are hardly more than one eighth of that number. In the flat meadows of Holland are large, fat, clean, contented-looking, black-and-white cows which are the especial pride of the Hollanders. But one might look for a long time without seeing a red cow such as is common in Massachusetts. So, if we wish to see some of the greatest industries of Holland, we must go not only to the cities, but to the farms and small villages. Here we should see a most interesting people, indeed. Perhaps it is because of the fact that they have always had plenty of water near at hand that everything in Holland is so clean. The Hollanders even scrub their sidewalks and barns, as well as every spot in their neat little houses. Everything about their houses, gardens, and farms is as neat and orderly as peas in a pod. But, as we have seen, it was no easy matter for these Hollanders to make these fine farms what they are today. The

sturdy character which they developed in their long struggle in the past will serve to help them meet their great problem of the future.

What is this problem? After having seen that the area of Holland is very limited and that the population is very dense, we see that Holland faces the difficulty of supporting a dense population in a small area. And we shall study Holland with this in mind and see how the geographical conditions influence the life and development of the people.

Let us see what some of the possible means of support for a small country with such a vast population might be. From what we have previously learned about England, one of the first suggestions would be: She might increase her area. We shall first consider how this might be done within the country. Since all the adjoining countries have much the same problem and are strong, she cannot acquire adjacent territory from near-by countries. But she can go on with the reclamation of land in the country itself. If we look at the physical map of Holland, we shall see in the northern part a shallow indentation called the Zuider Zee, extending about half way into the country. This is a part of the continental shelf which has never been entirely filled by wash from the rivers whose courses lie farther south and west. The Zuider Zee is about eighty miles long from the north to south, and the widest part is about forty miles. The Dutch people have set themselves the task of reclaiming the southern part of this great basin. This work will be done step by step, just as the dykes and polders were built in the past, and it will require between thirty and forty years to carry the plan to completion. The work has been so well planned that all nearby cities and rivers of this region will be undisturbed. The entire cost of this great project will be nearly one hundred million, an immense sum for a small nation to raise. But the Dutch people are willing to make many sacrifices to bring about this great work, knowing that eight hundred square miles of fertile land will be added to their country.

Our next question is: How else may Holland increase her area? It may be done by securing distant colonies which would be useful in furnishing raw materials and food as well as a market for manufactured products. The Netherlands has long been a colonizing nation; we know from the study of our own country that New York was founded by the Dutch as a fur-trading post. The colonial possessions of Holland are fifty times as large as the country itself and much of its commerce is carried on with its possessions in the East and West Indies, Dutch Guinea and Africa. While it is not likely that Holland can now secure any new colonies, she can develop those which she has and they will afford a place to which immigrants can go. As another means of support, Holland might develop intensively its present resources. She could do this by the use of the most improved methods in farming. Fully one third of the workers of Holland are engaged in agriculture, and the most fertile lands are being used for truck-farming by these thrifty, enterprising people, who are ever on the alert for better ways and means of progress. Large estates are rare in Holland and those which do exist are chiefly confined to the clay soils. These higher and less fertile lands might be used for grazing and for the raising of animals for breeding purposes. Tenant farmers predominate in the provinces of Utrecht, Friesland, South Holland and Zealand, while in the other provinces there are peasant proprietors. But whether tenant or proprietor, the Hollander is thrifty and industrious and is continually looking toward advancement. After agriculture come the textile industries, working of metals for ship building and agricul-

tural implements, and the manufacture of articles, the making of which requires a high degree of skill, all of which will be an aid in supporting the country's dense population.

Let us now see if the industrial pursuits in which Holland is engaged will help her in solving her problem. We shall first look at agriculture. To what type of products is she adapted? Since we know that much of the land of the Netherlands has been formed by silt, from rivers, sand dunes, and alluvial clays and marshes, she can expect a variety of products. The alluvial lands are best adapted to agriculture and grazing. The vegetable products of the sandy soils are rye, buckwheat, and potatoes, while hops, sugar beets, tobacco and wheat are produced on the marine clays. Orchards, market-gardens and the characteristic Dutch industry of flower-gardening are found principally on the higher grounds along the edge of the marshes on the sandy soils and in the reclaimed lands of the west. The climate of Holland, which is determined by the position of the country between fifty degrees and fifty-three degrees north latitude, by its situation on the eastern shore of the North Sea, and by its low elevation, is favorable for agriculture. Owing to the nearness to the sea, the summers are not unpleasantly warm, but the winters are cold because of the wind blowing over the North Sea. The wind blows from the sea to the land from directions between south-west and north for two hundred nineteen days in the year on an average, and from the land directions between north-east and south for one hundred forty-six. The rain fall on an annual average, is twenty-eight inches. Thus it is seen that with the exception of the limited area, the Netherlands is well fitted for agriculture.

How is the Netherlands fitted for grazing? As we have said, the higher and less fertile lands are used for grazing and for the breeding of cattle, horses and swine, which are sold for high prices. Why not use grazing as a method of solving her problem entirely? We know that Holland is far too limited an area to be a grazing country. But while she does not have the grassy plains necessary for a grazing country, she makes the very best use of her low, green meadows and more people in proportion to the population are engaged in dairying here than in any other country in the world. The Dutch cattle are to be envied above all others. They are given the best and most carefully prepared food; they are blanketed to protect them from flies and cold winds, and they live in stables as clean as soap and water can make them. Cattle tended with such care and given such nourishing food, yield great quantities of milk. The greater part of this is made into butter and cheese, both of which are noted for their excellence. These products were formerly made by hand on the little farm, but in recent years large dairies have been built, similar to those in our own country. The farmers sell their milk to these dairies, which make butter and cheese in great quantities by modern machinery. There are many cheese markets in the northern part of the country, but the largest and most important is the little town of Alkmaar. The number of cheeses sold at Alkmaar every Friday is enormous. It is not at all unusual for one hundred thousand to change hands during the morning. More than three thousand freight cars would be necessary to carry the annual export of Dutch cheese from the dairies to Amsterdam. Six or seven hundred of these cars would be loaded with England's share, while the rest would be shipped to other countries. Thus it is seen that, grazing, breeding fancy stock, and dairying greatly facilitate the solution of the problem.

What circumstances encourage fishing as an industry? First, there must be good fishing within reach. Holland carries on extensive fisheries in the North Sea, in the

Zuider Zee, in the rivers of South Holland and Zealand. Second, an insufficient quantity of meat might lead to the development of the fishing industry. As we have said, Holland does not engage in stock raising for beef, for her area is too limited. Thus a large market for fish has grown up within the country itself. Third, there must be an accessible market outside of the demand within the country. Since all near-by cities are also engaged in fishing, there is not a large market near at hand, although great quantities of fish are shipped to her colonial possessions and other markets at a distance. To what degree will the fishing industry help the Netherlands in solving her problem? The sea becomes her friend and gives her great quantities of cod and herring, which help solve the problem of support to a great degree, especially as a food supply within the country itself.

Considering the surface and the geological history of the country, may one expect mining to be an important industry? The Netherlands lacks coal in sufficient quantities to make it such. Traces of coal are found in the extreme east and southeast, and iron ore, which is made into an inferior grade of pig iron, is found in the poorly drained parts of small river basins in the east, and also in Limberg, farther to the south. Thus it is seen that the Netherlands is aided very little by the mining industry.

We shall next consider the manufacturing. What is necessary to carry on this industry successfully? Holland has a favorable commercial location, for it can easily import raw materials and export the finished product. Holland will never become one of the most important manufacturing countries, for it lacks sufficient quantities of coal, iron, petroleum and timber to make this possible. But coal is easily obtained from Germany for steam and electric power. The steady wind of the country is another available power. Considering the population and the relative amount of hand labor necessary for carrying on the industry heretofore mentioned, what degree of skill in handwork may one anticipate on the part of the people? The Dutch are famed in the manufacture of such articles. They have used the fine skill of the early refugees to their country to great advantage. The skill and trades learned from the refugees have been handed down from generation to generation. One of the most important of these skilled industries is that of diamond cutting. Amsterdam is the center of the diamond-cutting industry of the world. Many of these precious stones are brought from the African mines. The United States is the best customer of the diamond merchants of Amsterdam. Another important industry is the manufacture of pottery from the excellent pottery clay which is found near the city of Delft, for which the pottery is named. Today one third of all the people in Holland are engaged in the manufacturing industry.

Lastly, we shall consider commerce as another means whereby she may solve her problem of support. What conditions favor commercial enterprise? Holland has a favorable location for carrying on commerce with European countries, the East Indies, and other parts of the world. She has accessible markets for home products, which are to be exchanged for other products desired. Commerce in Holland is favored by the easy means of transportation, both within and without. Amsterdam, which is situated upon the Amstel river, from which it gets its name, is one of the most important commercial centers. The city was formerly called Amsteldam. This means the dam of the Amstel, and like Venice, it is a city of canals. The number of canals is so great that the city is divided into ninety

islands. Boats are constantly moving to and fro upon these canals, carrying goods from one part of the city to another. There are several sets of canals extending around the city, which is nearly circular in form. It takes several hundred bridges to enable the inhabitants to cross the canals in all parts of the city. The greatest port and commercial center is Rotterdam, situated upon the Rotte River, near the mouth of the Rhine. This position gives the city a great commercial advantage. Large ships can reach her wharves, for the water in the canals is deep. The Hague, which is the home of the Royal Family, although Amsterdam is really the capitol, is also but a short way from the coast, where extensive sand dunes may be seen. This city is noted for the peace conferences which have been held there, rather than for its commercial interests. About half way between the Hague and Rotterdam is the city of Delft, celebrated for the manufacture of Delft pottery. As we have said, there is the city of Alkmaar, from which hundreds of thousands of cheeses are shipped to all parts of the country itself, as well as to England and the United States. The Netherlands carries on considerable commerce within the country itself, as well as with other nations, and nearly another third of all her people make a living by engaging in commercial enterprise.

Considering the development of the country, which we have seen brought about the Dutch enterprise, what shall we think about the Dutch as a people? They are a simple, sturdy, God-fearing, home-loving people. They are short and squarely built in stature, with broad, rather stolid appearing faces. What has been the effect of geographical influences upon their character? Their constant struggle with these obstacles has made them brave and indpendent. The Dutch settlers of Orange Free State had to wrest the land from the natives just as their ancestors had to wrest Holland from Old Father Ocean. Their struggle has developed only the better side of their nature, as is shown by their hospitality and kindness to refugees, and by the world-renowned peace conferences made there by the other nations. How have the physical conditions affected their habits? They have brought about Dutch thrift and cleanliness and their love for outdoor life on the ice in winter, and in house-boats on the canals in summer. To about fifty thousand people in Holland, the house-boat represents home all the year round, and with the exception of the winter season when the canals are frozen, they are constantly on the move. It is said that the owners of these barges do a thriving business and in time become quite independent. How have these conditions affected their dress? Their quaint dress and wooden shoes show this plainly, although the wooden shoes are not worn commonly now, except on the farms and in small towns. The costumes of the Hollanders are very quaint and show their love of gay colors. The dress worn by people of different parts of the country is different and is affected by the different occupations in which the people are engaged. But no matter what industry the Hollanders are engaged in, they are simple, honest, very moral, and religious, and great lovers of the beautiful in life.

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MATERIAL FROM CINCINNATI, ILLUSTRATING THE ORGANIZATION OF A SERIES OF GEOGRAPHICAL PROBLEMS

A Study of the Cold Desert Regions, Suitable for the Third and Fourth Grades

By *Elinor C. Walther*

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A Study of the Cold Deserts

The project: We will study about the Eskimo people who live far away in a cold barren land and will try to make a picture of their homes on the sand-table.

I. Let us discover where the Eskimos live.

1. I have read in a book that the Eskimos live in the Northland. Where do you think this is? There are four main directions. East is the place where the sun seems to rise at the beginning of the day, while west is the place where it seems to set. North is the direction toward which the compass needles seems to point. The North star also helps us to find north on clear nights. South is the opposite direction of north. Let the children point toward the east. Let them point towards the west with the other hand. If your right hand is pointing toward the east, then you will be facing north. If your left hand is pointing towards the east, what direction will you be facing? Point toward the Northland and tell why you think it is in that direction. Take the children out of doors and let them look toward the Northland. Can you see the Eskimo-land? Why not?

2. The earth is so big that we cannot see all of it at once, so some very smart people have made a picture of it for us. The globe is a picture of the earth. If this is a picture of the whole earth, what would you expect to find on here? Point out the places suggested by the children. They should be eager to locate their home town. Let them discover the relation of their locality with reference to rivers, bodies of water, other cities, etc., from the globe and check up this speculation with the actual observation of the facts.

3. The globe shows where we live; it must also show where the Eskimos live. Let us point again toward the Northland. Now, if you were on this globe you would be be pointing this way. (Indicate the northern direction on the globe.) When we speak of north, we mean toward the point on the earth around which it seems to revolve or turn. (Turn the globe.) This point is called the North Pole. When we point northward, we are pointing toward the North Pole. Who can point toward the North Pole on the globe? Let them try to point toward the North Pole from selected points on the globe. Now, who can point toward the real North Pole?

4. The land about the North Pole is called the Northland. It is here that the Eskimos live. Let the children point out on the globe some of the places where they think the Eskimos might live. Find the names of some countries, such as Alaska, Greenland, etc. How far away do you suppose the Northland to be from us? So far we cannot see it! How many miles? I shall show you how to find out. Teacher uses the globe to compute the distance of northern Alaska from the home town. She should be careful to explain each step in the performance. (Scale 12-inch globe, consider 670 miles to the inch; 18-inch globe, 444 miles to the inch.) If a man could walk at the rate of ten miles a day, how long would it take him to get there? An airplane travelling at the rate of 100 miles an hour?

5. Review and drill. (Draw a circle on the board with the zones marked upon it as in Fig. 1.) These bands represent wide belts of hot or cold weather upon the earth. Which of these bands would you call the Northland? Why? The Southland? Halfway between the North Pole and the South Pole there is a line which people imagine to be drawn around the earth. It is called the equator. Try to find it on the globe. Where should it be drawn on Fig. 1? In this region the sun is almost directly overhead nearly every day in the year. What effect would this have upon the weather in this belt? If the middle belt is very hot and the two end ones very cold, what could you say of those half way between? What name would you give to temperate zone III to distinguish it from temperate zone IV? Find out from your book what the correct name for these zones should be. (Teacher may draw Figs. 2 and 3.) What is the difference between these three drawings?

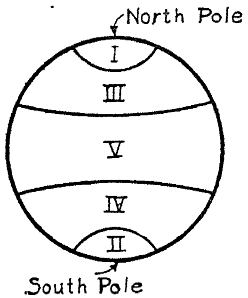


Fig. 1.

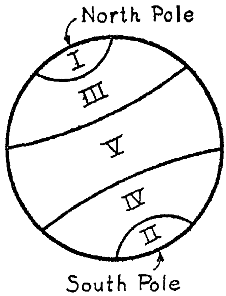


Fig. 2.

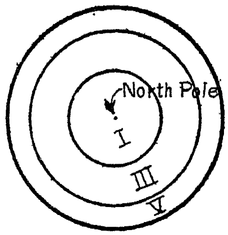


Fig. 3.

Divide the class into two teams. Start the game by permitting the captain of one side to step to the board and point to one of the zones on any one of the figures. He will then call upon as many of the opposing side as is necessary in order to get the correct answer. The pupil offering the correct answer becomes captain and repeats the procedure but calls upon the pupils of the opposing side. Score is counted by the number of turns necessary before the correct answer is given. This will afford the slower pupils the greater number of recitations. The drill should move with celerity and precision; the main idea is to afford each pupil a maximal number of recitation

opportunities in a minimal amount of time. The following method is suggested for keeping score:

Reds	6	4	0	10
Blues	5	3	3	11

II. Let us discover how the Northland appears.

1. What differences have you noticed between day and night? In regard to light? In regard to the sun? The moon? The stars? Where are the stars in the daytime? Have you seen the moon in daytime? What differences have you noticed in regard to warmth? Why is it warmer in the daytime than at night? The warmth comes from the sun.

2. In the distant Northland the days and nights are often several months long. At the North Pole there is but one day and one night in the whole year. How long does such a day last? Such a night? How would you feel during such a day? During such a night? Why would it be so very, very cold at night? When would it be summer? Winter?

3. We have found that at the North Pole summer is made up of but one day and winter is made up of a single night. A little further south (?) it is not quite this way. Still, during the middle of winter the sun does not shine for a long time while during the middle of summer it shines for several days in succession. Some places where the sun shines straight thru several days without setting are called "the Lands of the Midnight Sun." Why? What effect would the long, cold winter nights have upon the rivers and seas of the Northland? Why would the Eskimos not need an umbrella? How do you think that the sky would appear during this winter season? The stars?

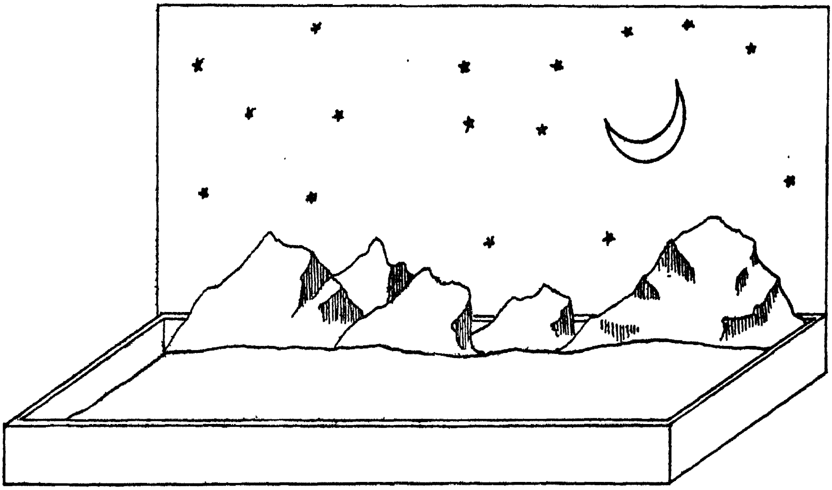
4. What will happen to the frozen rivers and ice-covered seas when summer comes? The summers are very short. What would become of the great blocks of ice upon the land? The smaller pieces? What will become of those resting upon the frozen sea? Such great blocks of ice drifting out in the sea are called "icebergs." Let the children search their textbooks for a picture of an iceberg. How long do you think it would take for such an iceberg to melt? What difference would there be apt to be between such an iceberg at the beginning and at the end of summer? What will finally become of the small icepans? The large ones? What will become of the remnants of the large ones at the end of the short summer? Why, then, would there be some very rugged places in the Northland? Very often there are to be found some very smooth, slippery places. How would these be formed? (1:37).

5. Which do you prefer, summer or winter? Which do the trees and flowers prefer? How do you know? In some parts of the Northland there are but few warm days. What effect will this have upon the trees and flowers? They have so little time to grow that they would soon die. Some trees do manage to grow. They live and wait thru the long cold winter and when the few warm days of summer comes they must be ready to send out their leaves and grow at once. Why? They have a chance to grow only a little bit before the winter sets in. They must then wait another whole year before another warm spell comes. What effect is this apt to have upon the size of such trees? Their number? Such trees are called "stunted." (2: 11–14.)

6. Let us make a list of the things we will need if we wish to make a picture of the Northland in winter. Let us close our eyes and imagine ourselves in the Northland. What things do you see that must be represented? Night, brilliant stars, icebergs, snow, lack of vegetation, etc. Let us see if our textbook can help us further. Let the children search the text for pictures that illustrate Northland scenery. (1:11,12; 5:34,35,61.)

Suggestions for construction work.

Dark blue paper may be used as the sky for the background of the scene. Stars can be cut from tin foil and pasted in the sky. The Great Dipper occupies an important place in the Northland sky. The North Star should be represented quite high in the sky and in proper relation to the pointers. A half moon can also be represented. Which way should it be placed in the sky? Icebergs may be cut out of white paper and colored with crayons. Blue, purple and black may be used sparingly for crevices and shadows. These may be pressed into the sand so as to stand up before the sky. The foreground should be covered with cotton. Flaked mica or tinsel sprinkled over this will be very effective.



III. Let us discover what animals live in the Northland and what they look like.

1. Why would the skins of these animals be very valuable? Why is it that their fur is so thick? During what season would it be most valuable? Why? Some of the animals live among the snow-drifts and great piles of ice. What color is their fur likely to be in winter? In summer?

2. What kind of food would these animals be likely to find? Very often moss and lichens are to be found frozen to the rocks underneath the snow. What kind of animals would be likely to eat this? Why do you suppose that most of the animals would be meat-eating animals?

3. Let us make a list of the kinds of animals that live in the Northland. Perhaps our textbook can help us. Let the children search their texts for suggestions and pictures that illustrate the Northland fauna. As each suggestion is offered and its appropriateness is discussed, have the children make a list of animals that inhabit the Northland. This list may be prepared upon the blackboard under two heads. Permit the children to decide under which heading the suggested animal should be placed. Such a list would be something as follows:

Plant-Eating Animals	Flesh-Eating Animals
rabbit	polar bear
reindeer	seal
musk ox	walrus
	whale
	dog
	wolf
	fox
	fish
	eider ducks
	snowy owl

Now then, if we wish to make a true picture of the Northland, what must we do next?

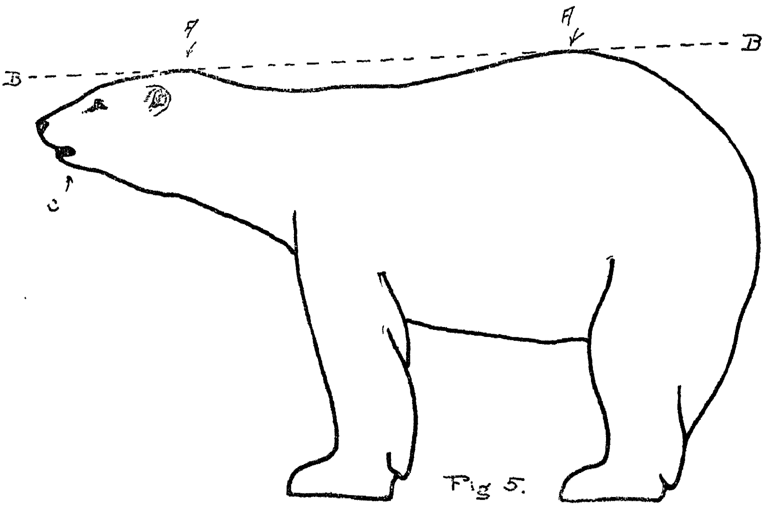


Fig 5.

IV. Let us discover what the polar bear is like and how to make one for our sand-table scene.

1. What are bears? What do they look like? Where do they live? Where have you seen them? How do they eat? What do they eat?

2. In what way is the polar bear different from the other bears? Where does he live? Why is he called polar bear? Why must his fur be thick and heavy? Why white?

3. What uses could the Eskimos make of a polar bear? Why would it be dangerous to try to catch one? What things would be needed in order to catch one? How would you use these tools?

4. Let each of the pupils of the class construct a bear according to the pattern suggested in Fig. 5, (or better still, his own pattern). Permit the children to place the finished models on the sand table as they think they should be. Read to them while they are busy with the mechanics of making the bears. (1:39, 40, 57, 59, 99, 100; 6:59; 5:37, 38; 3:46). A thin coat of paste can be applied and a very thin layer of cotton lint can be pressed to the model while the paste is still moist. This is very effective.

V. Let us discover how the seal lives in his arctic home and what use he is to the Eskimos.

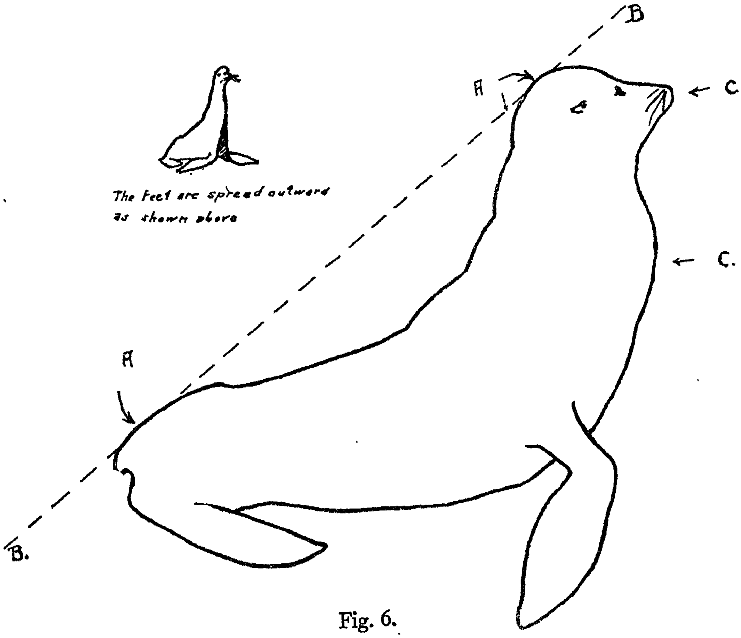


Fig. 6.

1. Seals and sea-lions are very much alike, but the fur of the seal is more valuable. Which of these two animals would live in the cold Arctic waters? For what purposes could the fur be used? Who would like to use it?

2. The seals are animals similar to the dog or cat, but they live a great deal in the water. What effect would this have upon the legs and body of the seals? Why would it be difficult to catch a seal in the water? Why would it be quite easy to catch one on land? Why would the seal be careful not to go too far away from the water?

3. What would the seal eat? How would he catch the fish? What animals would be anxious to eat the seal? The seal breathes air just as we do. What will he do when the ice freezes over the water completely? How many such holes will he break thru? Why?

4. What things will the Eskimo need in order to hunt seals? How will he use them? Where would he go to hunt the seals? Who would he take with him? What care would the hunter observe when he approaches the breathing holes? How will he catch the seal? What accidents might happen after the seal had been harpooned? Why would it require great care to get the seal after he had been harpooned? What would the Eskimo hunter do after he had been harpooned? What would the Eskimo hunter do after he had landed the seal? How would he carry it home? (1:35, 36, 49.)

5. Cut out and color a seal for the sand-table. The pattern in Fig. 6 suggests how it may be done.

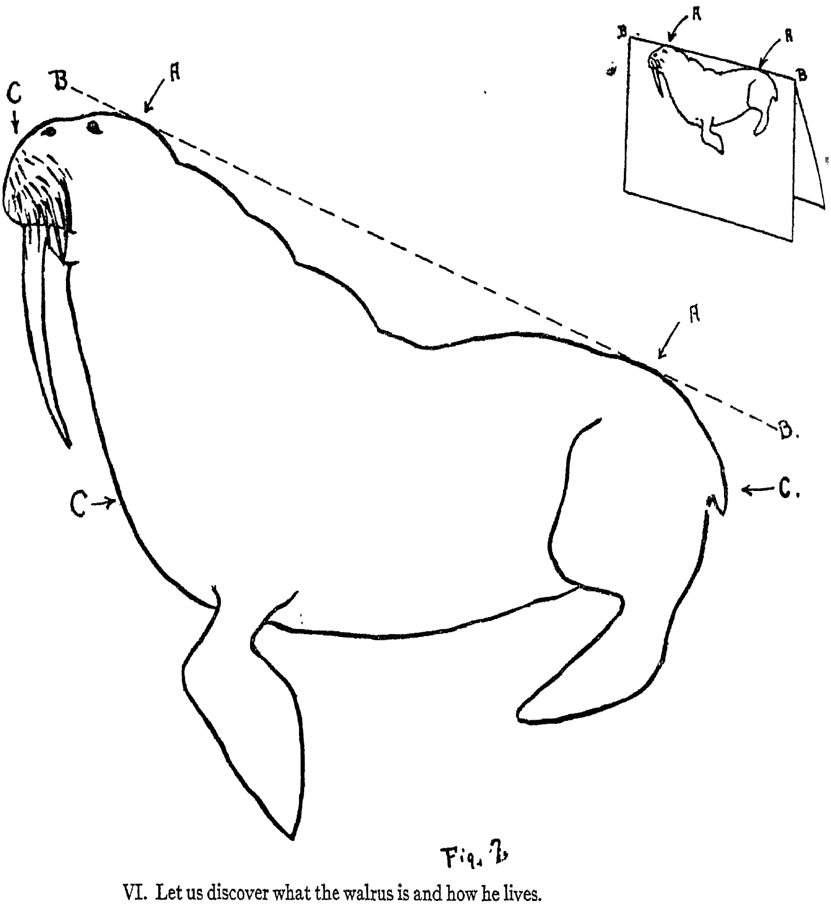


Fig. 7.

VI. Let us discover what the walrus is and how he lives.

1. The walrus is very much like the seal. Try to find a picture of one in your text. How would you distinguish one from a seal?

2. The walrus is almost as big as an ox. Why would he be clumsy on land? For

what might he use his big tusks? (1:20) When would you be most likely to see him? What would he do as you approached? What would you do in order to get close enough to shoot him?

3. The hide of the walrus is very thick, tough, and strong. For what would the Eskimos use it? We? The tusks are of fine ivory. What uses could be made of them? Why would the Eskimos be careful to save the big bones of the walrus? (1: 66, 67, 68.)

4. Make a walrus for the sand-table scene. See Fig. 7.

VII. The whale is another animal that lives in the Arctic lands. Let us see what he is like.

1. What do people mean when they say that a certain thing is as big as a whale? What idea does this give you about his size? Some whales grow to be 90 feet long and weigh 70 tons. He is the largest animal we know! Why would it be difficult for such an animal to live on the land?

2. The whale is a warm-blooded animal just like you and me. He breathes air just as we do, but he lives in the water all of the time. How would he get a breath of fresh air? Why are his nostrils on the top of his head? Why wouldn't you call him a fish? Why is it that some people call him a fish?

3. How does the whale swim thru the water? Where are his front feet? How does he use them? Where is his tail? His hind feet? His hind feet are missing. The whale swam about in the sea and never used his hind feet. They grew smaller and smaller until they entirely disappeared, just as your own arm would shrivel up if you never used it.

4. Where is the head of the whale? His body? His neck? How big is the head compared with the body? Some whales' heads are a third as big as their bodies. Where is the whale's eye? Nose? Mouth? How big is his mouth? Why do you suppose it is so big? The whale lives upon little animals and crabs that float about in the sea. How would he catch them? Why wouldn't he need powerful teeth? After he had seined out a mouthful of the little sea animals, how would he get rid of the sea-water when he was ready to swallow them? The teeth of the whale have disappeared and instead a horny fringe has grown around his lips. This is sometimes called "whale-bone." What does it look like? (1:136–8.)

5. How would the Eskimos catch a whale? Why would they be very happy when they succeeded in catching one? Whales live in the cold waters of the Arctic Ocean. What would the Eskimos expect to find underneath the skin of the whale? This fat is called "blubber." What would the Eskimos want to do with the "blubber?" What could they make from the whale-bone? What would we do with the whale-bone? What would they do with the hide? The bones? The meat? (1;158.)

6. Construct whales according the patterns of Fig. 8. Place them on the sand-table. Open stretches of water can be repressented by pieces of glass. Aquatic animals can be placed under the glass. The rough edges of the glass should be covered.

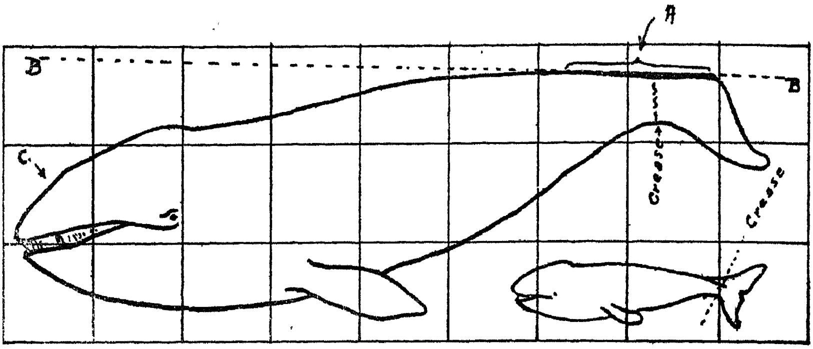


Fig. 8.

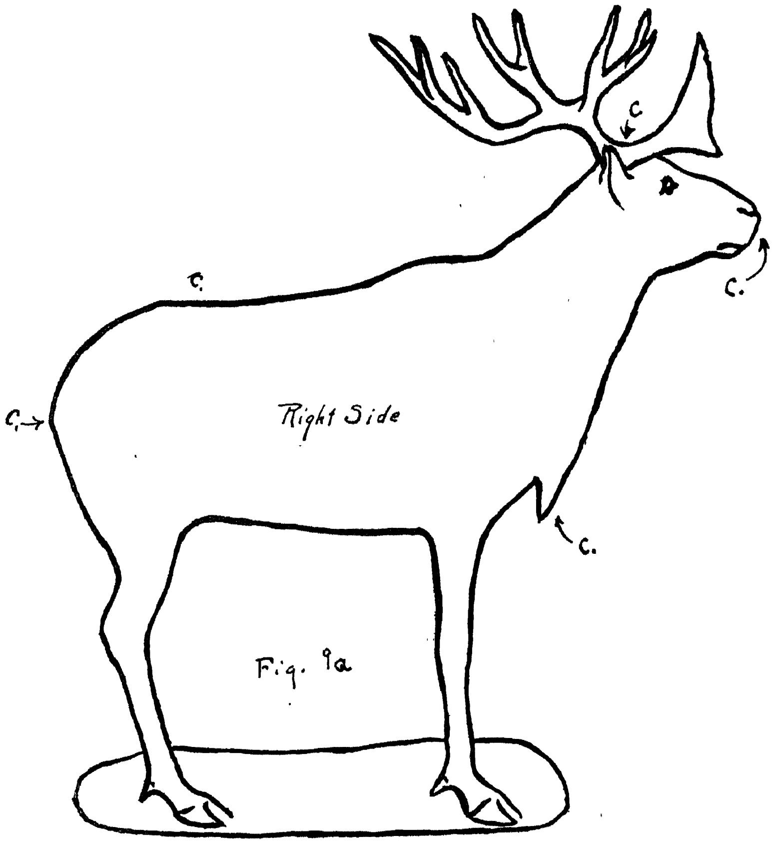


Fig. 9a

VIII. Let us make some reindeer for our sand-table.

1. What does a reindeer look like? Where have you seen them? What use does Santa Claus make of them? Why? The broad spreading hoofs of the reindeer enable them to run easily over the deep snow without danger of sinking or slipping. What use could the Eskimos make of them? How would they care for these reindeer? What would they eat? In winter? Uncle Sam found some Eskimos in Alaska who were very poor. He gave them a herd of reindeer and now they are getting very prosperous. Why? (1:17).

2. Figures 9a and 9b give a suggestive pattern. Study them out carefully before cutting and coloring.

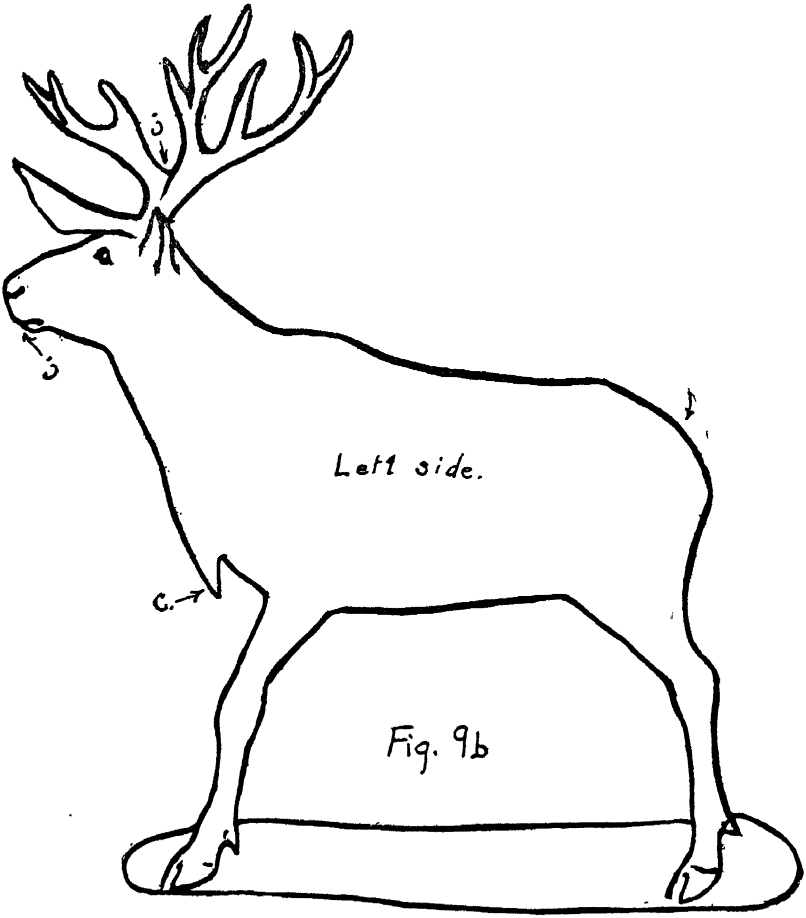


Fig. 9b

IX. Let us make some other animals for the sand-table scene.

1. The Arctic hare. How would you like to have such an animal for a pet? Why would it make a nice pet? How would you take care of it? What would you feed it? How would you tame it? What would the Eskimos be likely to do with it? What color would the Arctic hare be in winter? In summer? Why? How would the Eskimos catch them? (6:79.) See Fig. 10 for a pattern.

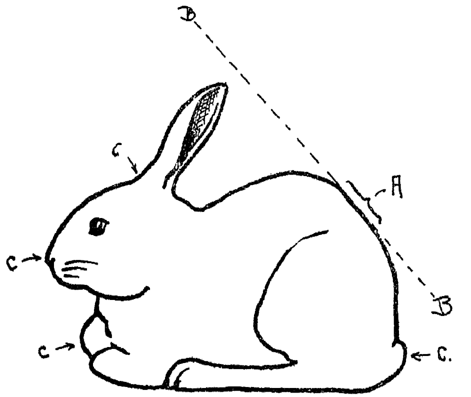


Fig 10

2. The Arctic fox. Why would the Arctic fox prowl about the camp of the Eskimos? What dangers would he face in doing this? What would the Eskimos do in order to catch an unwary fox? How would they build these traps? How would they bait the trap? What would they want to do with the captured fox? What would the fox skins look like? Where have you seen them? (1:143–145.) A pattern is suggested in Fig. 11.

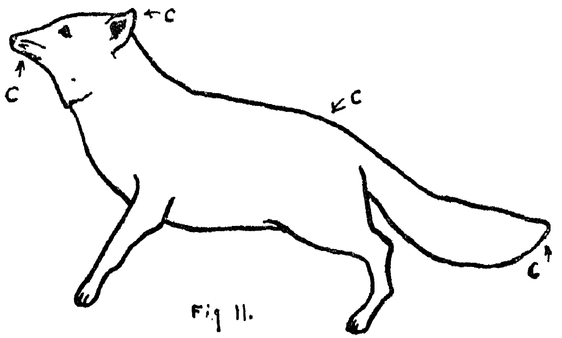


Fig 11.

3. The musk ox. (1:46,96.) Make a musk ox according to the pattern suggested in Fig. 12. Suggest that the children try to find out all they can about this interesting aalnim.

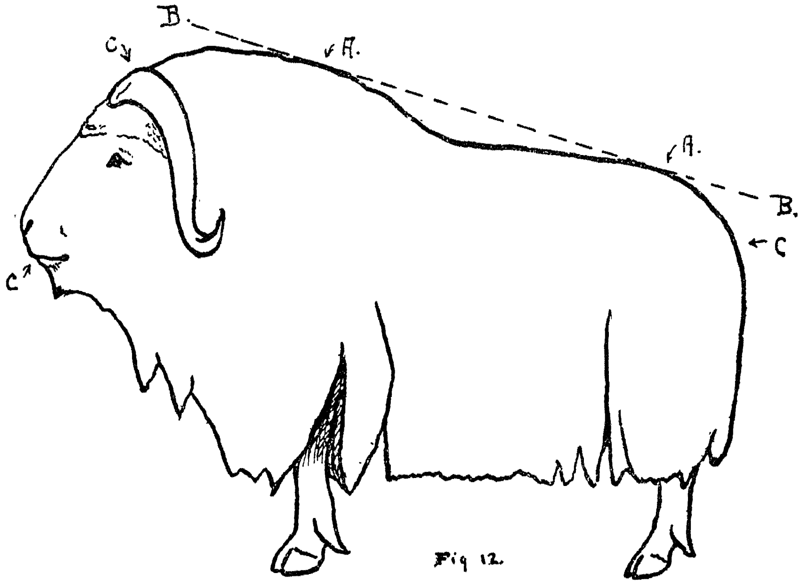


Fig 12.

4. The wolf. (1;24.) See Fig. 13.

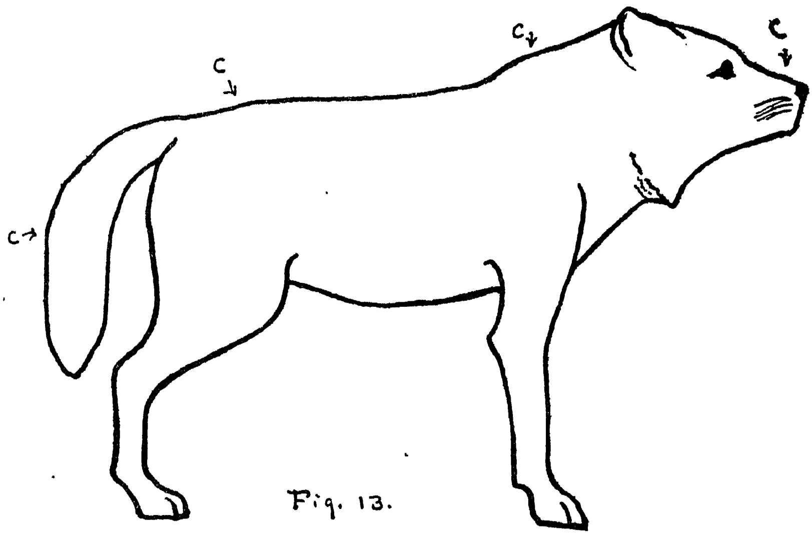


Fig. 13.

5. The Snowy Owl. (6:28.) Fig. 14.

Fig. 14.

X. Let us discover how the Eskimos dress and what they are like.

1. We have found that the Eskimos live in the far Northland where it is very cold. How would they have to dress? What sort of hats would they need? Shoes? Gloves? Try to find pictures of such people in your textbooks. What materials would they use for their clothes? Why? What better materials might you suggest? Robert Peary, the great American explorer who discovered the North Pole, lived a long time among the Eskimos. He dressed exactly as they did. Why?

2. Why do you suppose the Eskimos are so short and fat? What effect would the bright sunlight of the Arctic spring have upon the eyes of the Eskimo people? Why, then, are their eyes small and squinty? What would you need if you wished to play out-of-doors with the Eskimo children? The Eskimo people are believed to be cousins of the American Indians. What kind of hair would you expect them to have? What kind of faces? What would be the color of their skin?

3. A great explorer named Stefansson found a strange tribe of Eskimos at the Coronation Gulf in Canada. They had light skins and light hair and were called the "Blonde Eskimos." We do not know very much about these people nor where they came from. Most of the Eskimos are quite dark.

4. Who would be the tailor in the Eskimo village? What materials and tools would she need in order to make a suit of clothes? When the skins are first taken off of the animals they are not fit to use? What must be done with them? How would the little pieces of flesh be removed from the skin? What tools would be needed to scrape the skin? On which side must it be scraped? How must the skin be fastened so that

it can be scraped? After the skin is scraped it is still quite stiff; there is still a great deal of fat and oil in it. How could they get rid of this? The Eskimo women chew the skin until it is as soft as velvet. Every bit of fat has then been chewed out of the skin. Which side of the skin would they chew? Why? How would their jaws feel? When would the women chew the skins? Why might they enjoy this?

5. Reading references (5:73; 4:22, 23; 2:9, 120.)

6. Eskimos may be made by dressing a doll in bits of fur or velvet. Clothes-pins make fair substitutes for dolls.

XI. Let us make a home for the Eskimos.

1. How big would such a home be? The Arctic winter is so cold that it would take a great deal of fuel to heat a large house. How would they heat a small one? There is very little wood or coal. What kind of fuel would they use? How would they make a stove that would burn animal fat? Such stoves are made from large stone saucers, moss and animal fat. How would you arrange these so that they will burn and throw out heat? Let the children use the black-board freely to express themselves. (1:56, 172; 2:9.)

2. Of what materials would such a home be built? Of what advantage would it be to build it partly under-ground? Why would such a house be damp in summer? Why not in winter? Of what materials would the foundation be built? How would the spaces between the rocks and sods be filled up? How could the roof be made? How could the walrus hide be prevented from sagging? How could it be fixed so that the wind will not blow it off? How would such a place be ventilated? Heat is more precious than air. A certain amount of fresh air filters in thru the walls and thru the doorway when someone goes in or out. How many windows would there be? How big? How would they be made? Windows are sometimes made from skin scraped thin enough to be transparent. They must be small because they allow the heat to escape. How many rooms would there be in such a house? Why? Why would there not be a bath room? What would the Eskimos do in place of one? Why wouldn't the Eskimos want to go into their warm houses, or igloos, with their snow-covered clothes? Where would they take off their outer garments? Sometimes a small outer hut is built. It is usually connected to the main igloo by a little tunnel. The Eskimos use the small room to take off their ice and snow covered outer clothes. What would we call such a room? What kind of a doorway would such a house have? On which side of the house would it be placed?

3. Sometimes the Eskimos must move about from place to place, wherever the hunting is good. How would they build their temporary homes? They are made entirely of blocks of snow. How must the blocks of snow be arranged to hold up the roof? Which part would be the most difficult to build? Why? Why wouldn't the heat within the igloo melt it thru?

4. What other things besides a stove lamp would you find in the igloo? How would the bed be made? What would be used for blankets? How many beds would there be? Why? When would the children and the family go to bed? The long continuous night in winter and the continuous daylight in summer make 'bed-time' for the Eskimos very irregular. Children awaken or go to sleep whenever they feel rested or tired. Why would the grown-ups be more regular about sleeping? The winter nights in many places are four months long. If some of the Eskimos should

take a journey during this time, how could they tell how long they had been away? Time is reckoned in so many "sleeps."

5. Permit the children to construct an igloo of cotton in the foreground of the sand-table scene. This can be done by laying a thin layer of cotton over a frame built up of thin U-shaped wires, whose ends have been thrust downward into the sand.

XII. Let us discover how the Eskimos use their dogs and care for them.

1. Very often the Eskomos must pack up their things and move to another place. How would they carry their things? What things would they want to take along? If they did not expect to come back to the same place, what would they leave behind? What things, then, must they have in order to make this journey? List them (dogs, sleds, harness, whips, spears, etc.).

2. What kind of dogs would be most useful for the Eskimos? Do you know of any dogs that might do? Any that will not do? Why? What help could the dogs give the Eskimos? How would the Eskimos care for their dogs? Why wouldn't they allow them to come into the igloo? Where would the dogs sleep? What would the dogs eat? When would they be fed? Where would they be apt to find scraps of meat? How would the Eskimos keep their meat so that the dogs could not get it? So hungry and voracious are the Eskimo dogs that they even will devour leather and rawhide if they get hold of it. How would the Eskimos take care of their harness and whips? (1:27, 28, 29; 5:25, 72.)

3. Stand some sticks of thin wood about the igloo. Tie to the upper ends of these bits of meat fashioned from red plasticine. The pattern shown in Fig. 15 is suggested for the dogs. Harness may be made from black yarn.

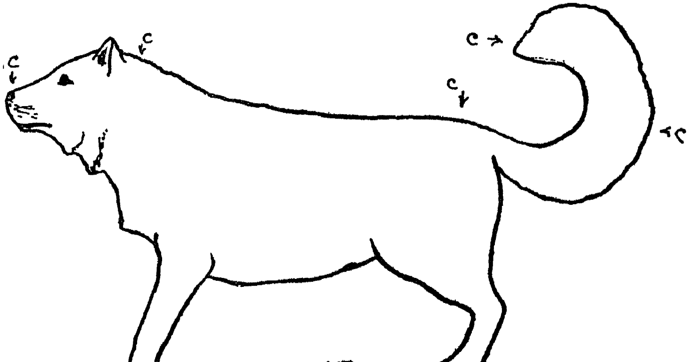


Fig. 15.

XIII. Let us discover how the Eskimos make and use their sleds.

1. Besides the dogs, sleds are necessary. How would they be made so as to run lightly over the ground? Of what materials? Wood is very scarce, only occasionally is a piece of driftwood to be found. Why? The frame work is made from the bones of animals. Which animals would furnish the most suitable bones? Walrus hide is

stretched over the frame. The tusks are quite smooth and hard. For what would they be used? How could a long smooth runner be made from the short curved tusks?

2. How are the sleds to be drawn? How might the dogs be fastened to the sled? How must the harness for the dogs be made? There are two ways of hitching up the dogs. Each dog may be fastened separately to the sled so that they will run in a fan-shaped formation or they may be hitched in tandem, *i.e.*, one behind the other. Which way would be the more difficult to drive? Which would require the better trained dogs? Which would require the better harness? (1:32; 2:8; 3:85.)

3. Why would such sleds be difficult to drive? There are no reins to hold. How would you manage the dogs? Why would a long whip be necessary? How would you use it? How would you guide the sled so as to avoid the bumps? How would you stop it? (3:Ch. XIII.)

4. Sometimes the children make toy sleds from blocks of ice. How would they do this? How would they shape the block of ice? What shape would they make it? What would the Eskimo boys do if too big a piece was broken off? How would they play with these ice sleds? How long would they last?

5. Light coasting sleds are often made. The boys use them to coast down the long slippery slopes. They stick reindeer horns into the snow on either side of the track. The boys take their sleds with their bows and arrows to the top of the hill. What will they try to do with their bows and arrows? How will they count the score? How would it feel to play such a game?

6. Make a sled for the sand table. See Fig. 16.

XIV. Let us find out how the Eskimos go hunting.

1. What tools would be needed? How would you make the bows and arrows? What materials might be used for the tips of the arrows? Sometimes the Eskimos are lucky enough to find large pieces of iron. What will they want to do with these? How will they break off little pieces of the iron? How will they work these into shape? These iron rocks are called meteors and wise men tell us that they have fallen from the sky. What would the Eskimos be likely to tell you about these stones? Why would they regard them as sacred? (4:44, 47.)

2. Spears will be among the most necessary tools. How would they be made? How would the Eskimos use them? For fish and seals special spears are made. They are made like the drawing in Fig. 17. How do they work? How would it be used in order to land a fish or seal?

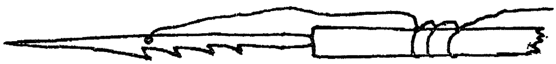
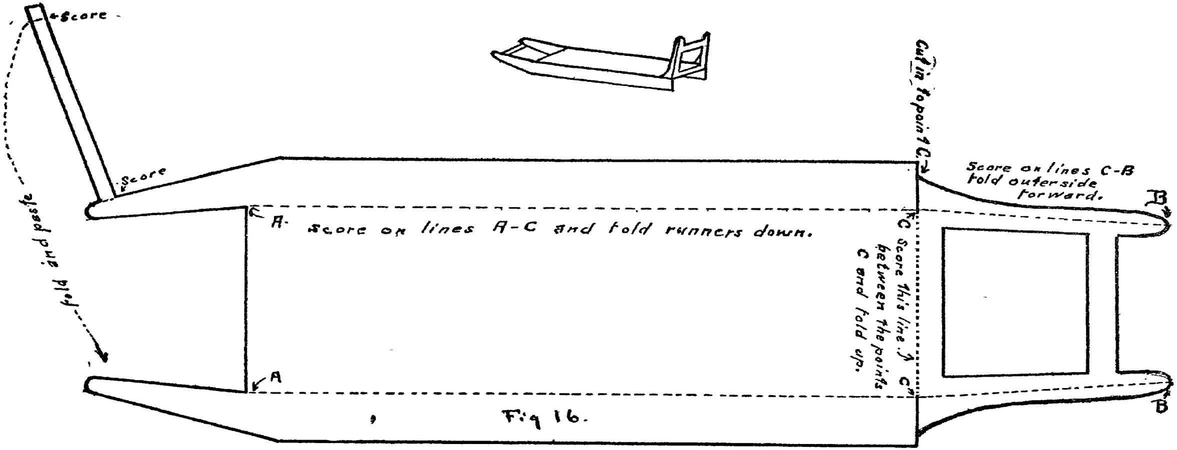


Fig 17

3. Knives will be needed also. Why? What materials would be needed in order to make one? How long would it take to make one? Where would they get the materials? How would the Eskimos use their knives? Why would the Eskimos rather sell their furs for knives than money?



Score
Score
fold and paste
A
A
Score on lines A-C and fold runners down.
Cut in to point C.
Score on lines C-B fold outerside forward.
B
B
C Score this line. C
between the points
C and fold up.
C

Fig 16.

4. When would the Eskimos go hunting? How would they know whether a bear or a musk ox was in the neighborhood? What would happen when the news reached the village? Who would go along on the hunt?

5. What would the hunters do when they came to the place where the bear had been? What would the bear do when he discovered the hunters approaching? How could they catch the bear? How could they make him stop running? What would the hunters do when they caught up with the bear? What weapons would the Eskimos want to use to bring down the bear? Which one of the hunters would they choose to attack the bear? What dangers would be faced in fighting the bear? How would a white man do this? How would they carry the dead bear home? What would the village folk want to do when the hunters came home? Who would get the skin of the bear? Who would eat the meat? How long would the meat be apt to keep without spoiling? How would they keep the dogs from eating it?

6. Sometimes the Eskimos go fishing. The lakes, rivers, and bays are covered with ice. What must they do in order to catch the fish? What things would be needed to do this? What dangers may be faced? How will the fisherman know when a fish has been caught? What would be done with the fish after they had been caught?

7. Let us fix up our Eskimo scene as it would appear after the hunt. Fish can be cut from paper. Slits can be made in the paper where the gill openings are located. The fish can be strung on a thread and the ends of this thread may be fastened to the upper ends of two small sticks that had been set in the ground. Bits of red plasticine can be fashioned to represent pieces of bear meat and these can be tied to the upper ends of thin sticks set upright in the sand.

XV. Let us see how the Eskimo children spend their time at home.

1. Very often the Eskimo children come into the igloo quite hungry. What will they say to their parents? The word Eskimo means "raw meat eater." This name was given to them by the Indians, but they call themselves Innuits. When the hungry child asks for a piece of meat, the mother will cut off a piece and dip it in hot water for a while. Why does she do this? Sometimes she will pin it to the wall of the igloo and hand the boy his bow and arrows. What will she expect him to do? When might he have the piece of meat?

2. What sort of playthings will the little Eskimo girls want? How could they be made? Who would make them? When? How would they play with their dolls? What things would the little Eskimo girls want for their dolls?

3. Sometimes the Eskimo fathers or mothers scrape little toy animals out of the soft, ivory, walrus-tusks. What animals would they make? Why?

4. The Eskimo children play games just like other children. One of their games is made from a piece of bone with many holes drilled in it. A leather thong is fastened to this and a large bone skewer is tied to the other end of the thong. The Eskimo boy holds the stick in his hand. How will he play the game? How will they count the score? How would your hand feel if you tried to play this game? Why? Make such a game and try to play it.

5. Very often the Eskimo children find a smooth, steep slope of snow. What will they want to do? In what different ways will they roll down the slope? Which will be the most difficult? What would they want to make at the bottom of the slope before they began to play?

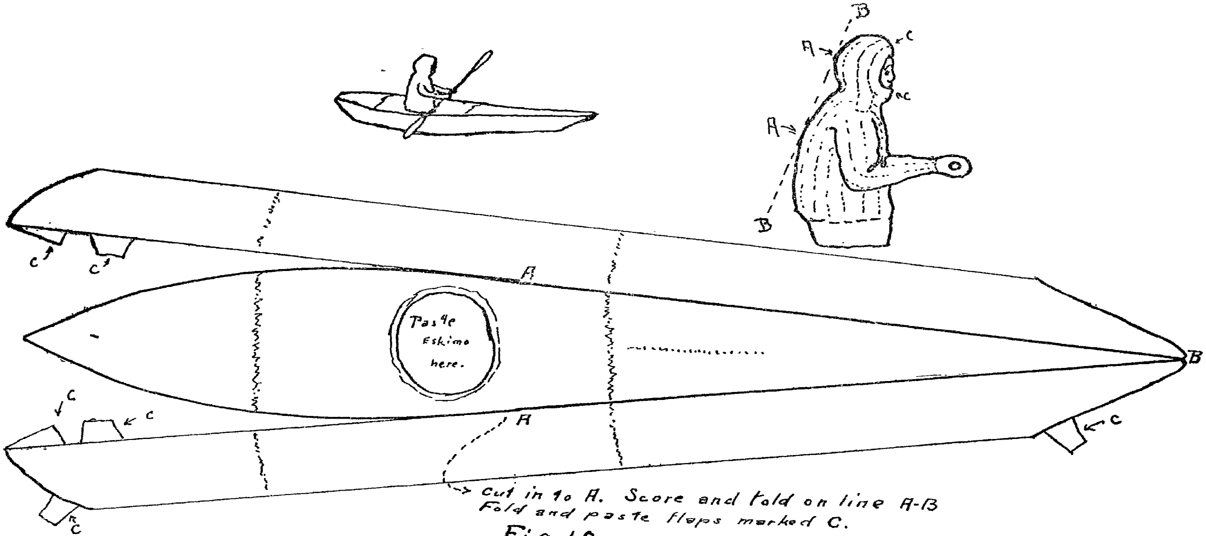

B
A
C
A
B
Paste
Eskimo
here.
A
A
B
Cut in to A. Score and fold on line A-B
Fold and paste flaps marked C.

Fig. 18.

6. The Eskimo boys and girls do not play baseball as our children do, but they play bean-bag. What might they use instead of a bag of beans? How would they make the sand bag? How big would it be? How would you suppose that they would play this game? The game is played very much like our game of volley ball, only the Eskimos get down on their knees to play it and there are no sides. How would they count the score? What would the hungry dogs be likely to do if the bag falls upon the ground? Try to play this game.

7. The Eskimo boys play a game similar to hockey. They have no skates. For what will they want to use the long, curved, rib-bones of the walrus? What other things will they need? How will they play the game? What accidents might happen?

8. Every Eskimo boy has a set of bows and arrows. What games might be played with these? The object of one game is to see how many arrows the boy can keep flying in the air. When must the boy stop shooting? How will he know how many arrows he had sent up? Sometimes they make the game much more difficult by drawing a circle in the snow. How would they play this game? Who would watch this game? Why must the people who watch the game be careful?

XVI. How summer comes to the Northland and what the Eskimos do then.

1. How do we know when summer is coming? How do you suppose that the Eskimos know? What will the Eskimos look for as the long winter night grows into twilight? Where will the sun appear? At first the sun will peep up above the southern horizon at noontime only. Point to where the sun would be at noontime if you were up in Eskimo land. But where is it really for you? How big is your shadow at noon? How big would it be if you were in the Northland? Why? How would the Eskimos feel the first time they saw the sun? Why?

2. What effect will the warm rays of the sun have upon the snow and ice? As the sun grows warmer and warmer and begins to remain in the sky longer and longer, the ice begins to break up into great pieces and float out to sea. What will become of these icebergs? Why would it be dangerous for the Eskimos to travel at this time? Why would they want still to wear some of their warm clothes? Why would the Arctic animals shed their winter fur? What color would the new fur be likely to be? Why?

3. What would happen to the igloo with the coming of summer? What would the Eskimos be compelled to do? Of what materials would they make the new home? Such tents are called "tupecs." Why would the Eskimos prefer to sleep in their igloos than in their tupecs? Where would they prefer to sleep in summer? Why?

4. What effect will the sunshine have upon the bare, wet ground? What might happen to any seeds that might be there? The Arctic poppy begins to grow and bloom amid the melting snow. What would happen to the moss on the rocks? Sometimes this moss grows into soft, thick bunches. What would the Eskimos want to do with this? How would the rabbits and the reindeer enjoy the coming summer?

5. When would the Eskimos want to go duck hunting? What had become of these birds during winter? What would these birds want to do just as soon as they had returned in the summer? Where would they build their nests? Of what materials do birds generally build their nests? Why cannot the birds of the Arctic regions build their nests this way? What would the Eskimos want to do just as soon as the nesting season began? Some of the Northland birds are so tame that they will allow themselves to be picked up. Why do you suppose that they are this way? They lay their

eggs in the crevices and ledges of rocky crags and cliffs. Why are these nests quite safe? One of the Northland birds is called the "foolish guillemot" because it will allow people to pick it up. Why are they hard to catch in spite of this? These birds came to the Northland sea cliffs in great swarms. Each mother bird lays a single egg. What would the Eskimos do with these eggs? The people who live along the coast of Labrador collect these eggs and ship them away in large numbers. How would they be used? Who would use them? The Eskimo mother likes to strip the bright red skins of the legs of these birds. She fills these with melted fat. This is the way Eskimo candy is made. Who would want to eat this?

6. The eider duck is another Arctic bird. It tries to build a nest of soft feathers to keep its eggs warm. Where would the birds get these feathers? The mother bird pulls the soft gray eider-down from her breast. Why would the Eskimos hunt for the eider ducks? What would they do when they found an eider nest? What would the mother bird have to do when she came back to her eggs? How often could she do this? Why must the Northland people be careful in collecting the down from the eider nests? What would the Northland people do when they had collected more eiderdown than they could use? What would the people in the countries further south want to do with this down? Indeed, they will pay good prices for it, because it is the most elastic comfort material known. Three fourths of an ounce will fill a large hat and three pounds can be sqeezed into one hand. How else could the down be obtained besides robbing the nests? Why is this a bad thing to do? What would the Eskimos want to do with the eider ducks after they had shot them? For what would they use the soft eider breasts? They are sewed together for undershirts. The down taken from the breast of a dead bird is not so soft and elastic as that taken from the nests. It is called "dead down." Why? What would they call the down taken from the nests? Why? What could the Northland people do in order to get a large crop of "live down?" These people actually climb the steep cliffs and chip out little basins in the ledges of the rocks. Why would they do this? If you wanted to buy such an eider ranch, how would you tell how much to pay for it? Why would Greenland send more eider down to the civilized lands further south than any other Northlånd country? (1:146, 149.)

7. What song-birds are to be found in the Northland? There is one bird that is called "snow-flake," or "snow bunting." What would such a bird look like? How big would it be? What would it do during a snow storm? What would other songbirds do during a now storm? What would such birds eat? Why would they make us feel happy in the Far North? What would the Eskimos be apt to do with them? (1:33.)

XVII. Let us discover how the Eskimos make and use their boats?

1. At what season in the year would the Eskimos want to use boats? Why? Why not in winter?

2. Of what what materials would such a boat be made? Since there is no wood to be had, it must be made from the skins and bones of animals. How big would such a boat be? Why? The skin of the seal is the best for making boats because it is almost water-proof. For what purposes would the bones be used? How would they be fastened together? What must be done before the sealskins can be used? How would they be fastened together? How would they make the seams water-tight?

3. Such a boat is called a "kayak." It is water-tight, except for a hole in the top. How would the Eskimo get into such a boat? How would he get out? What would he do before he started to paddle around in it? Indeed, these boats are so frail and light that the waves often turn them over. How must they be made so that they will not sink? What must the Eskimo learn to do when such a thing happens? How would he feel? What ought he to wear to prevent his clothes from getting soaking wet? Such raincoats are made from the tough entrail skins. How would it be fastened to the boat? Why is this necessary? How would it be fastened about his hands and face? Why wouldn't it be buttoned up the front? How would he get into such a coat? In what ways would such an outfit be like a diver's suit? It what ways would it differ? (1:149.) Who would be apt to make this coat? Why? The coat must be so carefully sewed that it will not let the least bit of water thru. How long would such a coat wear? How often would the styles be apt to change in Eskimo land? Why?

4. Why do you think that the Eskimos must be good boatmen? How would they make their boats go? Of what would they make their paddles? They make paddles like ordinary two-bladed canoe paddles. How would they use these? What other things would the Eskimo want to take along with him in his boat? Where would he keep these so that he could get them quickly? How could he prevent them from falling off into the sea? What animals would he hunt in this way? Why would this be dangerous? How would he bring a whale to shore with such a tiny boat?

5. Make a kayak for the Eskimo village. (See Fig. 18.)

XVIII. Summary and Review. Plan an Eskimo party. Make appropriate invitations. Invite some lower grade or the parents of the children. The important part of the entertainment would be brief impromptu descriptions of Eskimo Land by the members of the class. Eskimo games should be illustrated and the easier ones may be played. Cotton-candy and small balls of vanilla ice-cream rolled in shredded cocoanut to represent snow-balls form appropriate refreshments. Cocoanut cake is suitable. The animal models may be taken from the sand-table and distributed as favors. This will put the clearing of the sand-table for the next project well on its way. This type of work can often be justly criticized for the fact that such models are kept for considerable periods of time. Both teachers and pupils grow attached to their handiwork and are loath to destroy it, but the incomplete stages of new models in the making give far better impressions of the teacher's work and ability than do dusty heirlooms

Notes on the Construction Exercises for the Cold Desert Project

The figures appearing in this article have been designed to assist the teacher in preparing a number of classroom exercises in practical and correlated construction work. They should be regarded as patterns designed to assist the teacher to produce a large number of similar figures for the use of the children. The teacher may remove each plate and cut out the figures or trace them and then prepare a set of patterns of stiff paper.

Ordinary drawing paper is suitable for these construction exercises, although good results were obtained from the use of heavy manila wrapping paper.

In order to make use of the pattern the teacher merely places the cut-out pattern, or template, upon the paper and traces around the edges with a sharp pencil. In Figs. 5, 6, 7, 8, 10, and 12 care must be exercised so as to fold the construction paper in the

way suggested by the small cut in Fig. 7. Both sides of the animal are cut at once. The children should be cautioned to leave the both sides attached at the points marked "A." The dotted line "B . . . B" indicates the folded edge of the construction paper and is represented to assist the teacher in placing the pattern. When the two sides of the animal have been cut out they should be colored and pasted together at the points marked "C." The body may be filled out by inserting a wad of paper or cotton between the two sides. The legs should be spread slightly so that the animal will stand up.

For coloring purposes the most practical results are obtained with crayons. They are clean and easily handled, and skill in the use of crayons is especially desirable for upper-grade map work. Care should be exercised to lay on the colors in light tints with short parallel strokes. In this way the colors can be mixed to produce an endless variety of shades. When two shades are to be mixed, *e.g.*, orange and black, the color of the lighter value should be applied first.

The flippers in Fig. 7 and 8 should be colored black and should be bent outward at right angles to the body. The children should be encouraged to study the position of the shadows and to color them boldly with blue and black.

It is necessary for the teacher to enlarge Fig. 8 before it can be used as a pattern. To make the enlargement, the teacher should procure a large piece of construction paper. Carefully draw three rows of one and one half inch squares, nine to each row. These squares correspond to the small squares shown in Fig. 8. The outline of the body of the whale can be determined as a series of points indicating the position where the body line of the animal crosses the sides of the squares. The measurements are made first on the small figure and this must be increased three times for similar measurements on the large figure. After these points have been located and marked, it is possible to draw the outline of the figure with surprising accuracy and grace. In this way it is possible to enlarge pictures and drawings with very little error. By practice it becomes possible to estimate the distances instead of measuring them. It is important that the hinge at "A" be kept. After the two sides of the animal have been pasted together at the head, the tail should be creased as is suggested in the small sketch shown in Fig. 8. This will make the two halves of the tail stand apart.

There are two different patterns for Fig. 9. Note that one is a right and the other a left side. Care must be exercised in coloring and pasting these together. Paste the sides together at the points marked "C." The body should be filled out as was suggested for the other animals. The antlers should be spread apart gracefully.

The hinge at "A" in Fig. 10 is important. The ears should be spread apart.

Two parts are cut out exactly alike, and are pasted together at the points marked "C" in Figs. 11, 13, 15. It is best to color small animals before cutting them out.

A single thickness of paper is used to make Fig. 14. Slits are to be cut along the lines "D," thereby making a clip which can be used in perching the bird on the edge of some object.

Only one or two examples of Figs. 16 and 18 are necessary. These exercises are quite difficult and it is recommended that the most skillful children of the class be allowed to make this their contribution. Straight lines that are to be folded should be scored lightly with the point of a scissors or a pin. This will make a clean straight hinge. The small cuts indicate how the finished product should appear. Note that these exercises afford considerable opportunity for decoration and design.

MATERIAL FROM IOWA CITY ILLUSTRATING A COMPLETE OUTLINE FOR A SERIES OF GEOGRAPHY LESSONS

The Study of Latin America

By *Ernest Horn, Professor of Education, State University of Iowa, and Helen C. Davis, Teacher in the University Elementary School, State University of Iowa.**

This unit of subject-matter is offered as a sample attempt to organize the study of a certain part of the world so as to make it focus upon the most important problems growing out of the relations between the United States and that part of the world. The criterion which has been used in selecting, organizing and emphasizing this material, has been the following: Among the various facts, locations and principles which might be taught in connection with this part of the world, select those which are most important in throwing light on the solution of the problems concerning which an American citizen should be intelligent.

In realizing such a purpose as that given in the preceding paragraphs one may proceed in one of two ways. First, he may approach the subject from the standpoint of the physiography of the country, stressing location and political geography particularly and subordinating our relations to the countries involved. Second, he may start with these relations, make them the basis of organization, and subordinate the physiography and political geography. There has been a strong tendency in the last few years to adopt the second basis of organization. Often such an organization has been called the "problem" or the "project" method. The present article represents one form of the problem organization, but with a special attempt to guard against the neglect of the essential background of physiography.

Attention should be called to the fact that in teaching this unit of subject matter emphasis has been given to three procedures: First, the objectives to be attained by the pupils have been thrown into the form of the most important problems confronting this country today in relation to Latin America. Second, the physiographic conditions

* The writers wish to point out that the present article is the culmination of the work of a number of teachers working for the most part under the supervision of Dr. Horn. Particular credit should be given to Miss Blanche Campbell, formerly of Speyer School, Columbia University; Miss Frances Warren, formerly of the Scarborough School; Miss Alice Camerer, University High School, University of Iowa; and Miss Libbie George, formerly of the University Elementary School, University of Iowa. The writers also express appreciation for advice and criticism from the departments of Sociology, and Economics, Political Science, History, and Geology, of the University of Iowa.

which affect the understanding and solution of each problem have been set out for special emphasis. Third, special attention has been given to reviewing, summarizing, and clinching each point. It is hoped that these three provisions will safeguard this particular form of problem organization against the defects which have sometimes characterized problem teaching.

In satisfying the demand for clinching important facts it has been found to be very useful to build up, as the various problems were considered, a memory list of places, facts, and geographic principles which should be accurately known and retained. This list should be drilled upon until well fixed.

It will be noticed that the references given are quite extensive. This is because it has seemed desirable to include all material which is likely to be available to any teacher. All references given have been actually used in classroom work. And while the list is more extensive than that which could be obtained by most schools, it cannot be urged too strongly that teachers and supervisors use every effort to secure an adequate working library. It must be kept in mind that one of the purposes of popular education in a democracy is to acquaint the public with the best sources of data on a given problem, and to train them in the use of these data. Such periodical literature as the *Pan-American Magazine* and *Bulletin of the Pan-American Union* are particularly valuable in presenting problems in a fresh and vital way.

However, actual experience in introducing this course into public schools has shown that it can be taught reasonably well with such facilities as can be obtained by any teacher. Many of the problems may be fairly well taught with no other material than that given in the text. There is a great deal of valuable material which may be secured free. This material, with the facilities afforded by the public library, makes possible fairly satisfactory results.

The selection of the problems included in this course and the treatment of each has been made, frankly, on the basis of such opinion as could be formed from the study of the references given. No doubt there are errors in perspective among the various problems. It is hoped that the outline approximates a true picture of the problems involved in our relations with Latin America. A finished course can be made, however, only on the basis of scientific study which will establish the objectives which are to be attacked in the study of Latin

America. Particularly, there is a need for the scientific determination of the minimal essentials which are to constitute the memory list of locations, facts and principles involved in the proper study of this part of the world.

A. *Introduction. Method of Approach*

After explaining what is meant by Latin America, and pointing out on the map the territory which is included under the term, ask the pupils this question: In what ways are we interested in Latin America? A brief discussion should show the pupils the limits of their present knowledge and afford a basis for the following assignment. For to-morrow's lesson find out what you can about the most important relations between Latin America and the United States. You may talk to your parents and read anything you can find.

On the following day take up the reports of pupils and develop with them the following problems:

1. How may we improve our trade with Latin America?
2. How may the people of the United States and of Latin America get a better understanding of each other?
3. How are our relations to Latin America affected by the Monroe Doctrine?
4. What is the Pan-American Union doing to bring about better relations between the United States and Latin America?
5. How has the building of the Panama Canal affected the relations between Latin America and the United States?
6. To what degree is Latin America a field for trained Americans, particularly for engineers, and for the investment of American capital?
7. What special problems have we in our relations with Mexico?

The work of the course may then proceed according to the outline under B, which follows:

The method of approach just outlined is, of course, but one of many that might be suggested. In the past the problems involved have been introduced, sometimes by reading a newspaper or magazine article dealing in a general way with our interests in Latin America, and sometimes by a discussion which began with questions regarding the source of our supply of rubber, coffee, sugar, and other of the more important imports. There is an advantage in breaking up the large problem immediately so that a certain perspective may be kept during the study of the detailed problem.

B. *The Detailed Course*

I. What are our present commercial connections with Latin America?

What products that we use or need come from Latin America?

References*: Latin American Year Book (1919) 3, 30, 31, 88, 156, 157, 207, 208, 238, 239, 311, 482, 494, 495, 522, 541.

Verrill, Chap. 8. Filsinger, 530.

Tarr & McMurry, 410, 411.

a. What is the total value of each of the more important products which we import from Latin America?

* See bibliography at end of this article for details of references.

References: World Almanac (1919) p. 370; Verrill, Chap. 8; Koebel, 322, 327; Tarr & McMurry, 411; Filsinger, 530; Bulletin of the Pan American Union, Vol. 48, p. 40–49, "Latin American Foreign Trade in 1917." Pamphlets of the Pan American Union issued for each country give in some instances the commerce for that country.

b. How much of the coffee used in the United States comes from Latin America?
   1. How do you account for the recent rapid advance in the price of coffee?
   2. What are the conditions of soil, climate, and topography that govern its production?
   3. What Latin American countries export it to the United States?

      References: World Almanac (1919) pp. 250, 364, 372.
      J. Russell Smith—Commerce and Industry, 331-333.
      J. Russell Smith—Indus. and Com. Geog., 288-296.
      Freeman & Chandler, 182–194.
      Pamphlet on Brazil and on Columbia issued by the Pan American Union.
      Robinson, pp. 258, 272, 273, 274, 236, 264, 265, 443.
      Tarr & McMurry, 174, 245, 246, 248, 249, 250, 251, 403, 404, 411.
      Adams, 70, 71, 338, 339, 348–350, 374, 383.
      Rocheleau, 249, 283, 292, 294, 296, 303.

c. How much of the rubber used in the United States comes from Latin America?
   1. Why do we use so much more rubber than formerly?
   2. Where and how is it produced in Latin America?
   3. What countries export it to the United States?
   4. How much of the total amount used comes from Latin America?
   5. What conditions of soil, climate, and topography are necessary for its production?

      References: Filsinger, p. 530, 531.
      Smith (C. & I.) 240–243, 313, 314, 328, 329.
      Smith (I. & C. G.) 541–543, 545–551.
      Latin American Year Book (1919)
      Pamphlets of Pan-American Union on:
      Salvador, 2.
      Nicaragua, 2.
      Guatemala, 2, 19.
      Bolivia, 2, 15, 23.
      Mexico, 2, 41.
      Colombia 2, 23.
      Brazil, 2, 12–14.
      Koebel, 64–66.
      Robinson, 84, 199, 256, 258, 271, 272, 273, 287, 288, 447.
      Adams, 112, 113, 336, 338, 341, 342, 347–351, 370, 372, 375, 376, 380, 381.

Keller and Bishop, 85–90.
Freeman and Chandler, 278, 280, 281, 284–287, 288, 289, 290, 292, 294, 296, 297.
Carpenter, South America, 312–320.
Chamberlain, South America, 53–58.
Hirst, Guide to South America, 106, 264–267, 317, 318.
Bryce, South America, 75, 76, 458, 559.
Lange, In the Amazon Jungle; chapter on "Life Among the Rubber Workers," 161–250.
"Caoutchouc," a booklet published by the LaCrosse Rubber Mills Co., LaCrosse, Wisconsin, pp. 4, 7–9.
Tarr & McMurry, 173, 177, 248, 251, 407.

d. How much of the cacao products used in the United States come from Latin America?
1. What are the chief uses of cacao products in the United States?
2. What are the most important cacao producing and exporting countries of Latin America?
3. How much of the total amount used in the United States comes from Latin America?
4. What are the chief steps in its production?
5. What are the conditions of soil, climate, and topography necessary for its production?

References: Filsinger, 530, 531.
World Almanac (1919) 364.
Smith (C. & I.) 329–331, 347, 348.
Smith (I. & C. G.) 304–307.
Verrill, 141, 147, 153, 164, 181, 194, 209.
Latin American Year Book (1919) 156, 238, 263, 138, 307, 299, 311 321, 330, 393, 453, 468, 494, 541.
Freeman & Chandler, 113–118, 120–128.
Illus., 127, 128, 129, 130, 131, 132, 133, 134, 135.
Chamberlain, How We Are Fed, 121–123.
Chamberlain, South America, 158–164.
Carpenter, South America, 32–34, 324, 336, 337.
Ecuador Pamphlet from Pan Amer. Union, 13–15.
Adams, 72, 339, 340, 344, 346, 372, 374, 376, 383, 384; map p. 70.
Robinson, 33, 89, 271, 273, 274, 265, 288, 443.
Keller & Bishop, 126, 127.
Tarr & McMurry, 245, 251, 404.
Brigham & McFarlane, 226, 238, 405.

e. To what extent do the Latin American countries help supply our need for meat?
1. Do we produce all the meat we need?
2. From what Latin American countries do we get meats?
3. What are the centers of the live stock industry?

4. What are the conditions of topography, soil, and climate that govern the place of production of the live stock industry?
   References: Smith (C. & I.) 48, 336–339, 341, 342, 462, 572.
   Smith (I. & C. G.) 134–137, 172, 173, 178–181.
   Filsinger, 395.
   Latin American Year Book (1919) 29, 30, 80, 81, 88, 124–28, 151, 157, 196, 208, 232, 319, 388, 389, 393, 480, 519, 520.
   Pamphlets from Pan American Union on Argentina, Brazil, Chile, Uruguay, Paraguay, Mexico.
   Adams, 46, 343, 345, 358, 359, 360–362.
   Rocheleau, 305.
   Robinson, 81, 231, 256, 270, 281.

f. To what extent do we depend upon Latin America for leather and fur?
   1. How do the prices of articles made of leather and fur compare with the prices of similar articles ten years ago?
   2. How much of the leather and fur that we use is produced in the United States?
   3. How much do we get from Latin America?
   4. From what localities do they come?
   5. What are the characteristics of the fur-producing region? Of the leather-producing region?
      References: Latin American Year Book (1919) see under "exports to the United States" for each country.
      Pamphlets of the Pan-American Union.
      Chile, p. 22.
      Paraguay, p. 12.
      Argentine Republic, p. 16.
      Uruguay, p. 15–17.
      Tarr & McMurry 247, 255.
      Smith (C. & I.), 338.
      Smith (I. & C. G.), 137, 172–173.
      Keller & Bishop, 127.
      Adams, 77, 98, 144, 331, 337, 350, 356, 359, 361, 365, 372, 215, 377.
      Robinson, 83, 270, 287, 445.

g. To what extent do the cereal crops produced in Latin America find a market in the United States?
   1. How much of this crop does the United States import?
   2. What is the effect of the importation upon the price of the crop for the United States?
   3. Is there any competition between the United States and Latin America in furnishing this crop to other countries?
   4. What are the characteristics of a good wheat-producing country? Corn?
   5. What interests have we in the development of grain production of Latin America?

References on corn: Smith (C. & I.), 340.
Smith (I. & C. G.), 93, 96.
Robinson, 231, 257, 273, 282.
Tarr & McMurry, 173, 245, 249, 251.
References on wheat: Tarr & McMurry, 246, 247, 249, 251.
Keller & Bishop, 135, 140–141.
Adams, 331, 359, 362, 366, 372, 374.
Robinson 87, 256, 273, 282, 286, 441.
Smith (C. & I.), 13, 31, 555.
Smith (I. & C. G.), 59–60.
Dodlinger, 105, 114–115, 282, 311–313, 316, 319.
Edgar, 70, 71, 73, 78, 172.
Bengston & Griffith, 217–229.
Rutter, 83–85, 88–90, 96, 99–101, 167, 257–259, 260–265, 269, 270, 296, 300–301.

h. To what extent does the sugar used in the United States come from Latin America?
   1. How much of the total amount used in the United States comes from Latin America?
   2. What are the chief countries producing and importing it to the United States?
   3. What are the conditions of soil, climate and topography that govern its production?

References: World Almanac (1919), 364.
Latin American Year Book (1919), 280, 394.
Freeman & Chandler, 77, 84.
Verrill, Chap. 8. See under exports for each country.
Smith (C. & I.), 107–109, 110, 322–324, 327, 331, 347, 377.
Smith (I. & C. G.), 272, 274, 275, 277, 284.
Tarr & McMurry, 153, 178, 179, 174, 245, 246, 248, 250, 251.
Adams, 67, 178, 334, 337, 340–344, 350, 356, 367, 372, 376–377, 384–386.
Rocheleau, 283, 296, 298, 299, 307.
Robinson, 89, 236, 237, 263, 265, 274, 441, 442.
Pamphlets on Cuba, Costa Rica, Brazil.

i. Other food products; fruit, manioc, nuts.
   1. To what extent do we depend upon Latin America for fruit? Which are the principal fruits imported? Which of these are grown in the United States?

References: Adams, 331, 338, 339, 351, 356.
Robinson, 256, 282.
Tarr & McMurry 153, 173, 174, 178, 244, 245, 246, 247, 248, 250, 255.
Pamphlets of great value from the Pan American Union dealing with the individual tropical countries.
Freeman and Chandler, 272, 273–274.

2. What use do we make of manioc in this country? Why is it not so important as in Latin America?
   References: Tarr & McMurry, 244.
   Keller & Bishop, 120.
   Adams, 351, 356.
   Robinson, 86, 273.
3. Why are more nuts used than formerly? What are the principal nuts imported from Latin America? Which of these are grown in the United States?
   References: Adams, 351.
   Tarr & McMurry, 244.
   Freeman & Chandler, 278.
4. How much tea do we get from Latin America? Does this trade promise to increase or decrease?
   References: Pamphlet of Pan American Union, "Yerba Mate—The Tea of South America."
   Tatt & McMurry, 244, 248.
   Adams, 355, 356.
   Smith (C. & I.), 342.
   Freeman & Chandler, 172, 173.

j. What are the chief mineral products exported to the United States?
1. What are the most important mineral products exported to the United States?
2. Where are these products found?
3. What are the leading countries exporting them to the United States?
4. Which of these industries will probably become more important in the future?
   References: Pamphlets—Petroleum Development in Latin America
   Chile, Peru, Bolivia, Venezuela, Ecuador, Columbia, Mexico.
   The Nitrate Deposits of Chile.
   Tarr & McMurry, 245, 246–247, 249, 250, 252–253, 254–255.
   Latin American Year Book (1919).
   Smith (I. & C. G.), 611, 618, 623–624, 625, 630, 635–637, 638.
   Smith (C. & I.), 316, 334, 345–347, 349, 487.
   Adams, 332, 345, 347, 366–367, 368, 373, 377–379.

k. To what extent do the forest products other than rubber of Latin America find a market in the United States?
1. What woods are most commonly imported?
2. What product, used in the tanning industry, is imported?
3. What use do we make of chicle?
   References: Freeman & Chandler, p. 354, 310–312.
   Tarr & McMurry, 153, 173, 177.
   Smith (C. & I.), 341, 311–315.
   Smith (I. & C. G.), 533.
   Robinson, 281.

Latin American Year Book (1919).
Pamphlets:
Paraguay, 20–22.
Dominican Republic, 12.
Nicaragua, 12.
Haiti, 13–17.
Salvador, 16–24.

l. How has the war caused a change in the total value and kinds of products imported from the Latin American countries?
References: Latin American Year Book, p. 2–3.
World Almanac (1919), p. 356, 363, 366.
Bulletin of the Pan-American Union, Vol. 48, pp. 40–49.

m. In what ways can we improve the sale of our products to Latin America?
1. What is the total value of our exports to the Latin American countries?
References: World Almanac (1919).
Bulletin of the Pan-American Union, Vol. 48, pp. 40–49.
"Latin American Foreign Trade in 1917."
Koebel, 322, 327.
Tarr and McMurry, 411.
Filsinger, 12, 530.
Latin American Year Book (1919).
Robinson, Appendixes XIV & XV.
2. What are the chief articles exported to the Latin American countries?
References: Koebel, 323–327.
Filsinger, 369–380.
World Almanac (1919).
Latin American Year Book (1919), 370.
Rocheleau, 263–264, 286, 296, 297, 303, 306.
Tarr & McMurry 410, 411.
3. Which are the principal countries of Latin America to which we export goods?
References: World Almanac (1919).
Koebel, 322–327.
4. How has the war caused a change in the amount and kinds of goods exported to the Latin American countries?
References: World Almanac (1919), 372.
Bulletin of the Pan-American Union, Vol. 48, pp. 40–49.
Filsinger, 2.
Scientific American, Vol. 120, Feb. 8, 1919, p. 124.
Pan American Magazine, Vol. 25, pp. 165, 166.
Bulletin of Pan-American Union, Vol. 45, Sept. 1917, p. 393.
Journal of Political Economy, Vol. 25, pp. 493–504.
Review of Reviews, Vol. 53, pp. 221; Vol. 56, pp. 514–516.
Nation, Vol. 106, Mar. 28, 1918, pp. 378, 379.

Verrill, 4–5.
Pamphlet, Our Opportunity in Latin America.

5. Why should we have better banking and credit systems in Latin America?
   References: Verrill, 89–96, 45–48.
   Koebel, 201–203.
   Pamphlet, Our Opportunity in Latin America, p. 5–6.
6. In what ways do we need to give our salesmen more careful training? What languages should they know? What should they know about the tastes, customs, and culture of the people?
   References: Koebel, 86, 137, 46, 50–62.
   Verrill, 22, 30, 84–89.

n. What are the present trade routes between the United States and Latin America?

1. What are the most important ocean routes?
   References: Smith (I. & C. G.), 712, 713–715, 784, 835–836; map, pp. 780–781.
   Adams, 329–331, 367, 368: map Figure 1.
   Robinson: 261–262, 290; maps, Figures 181, 182.
   Smith (C. & I.), 315; maps Fig. 181 between pp. 324–325; Fig. 286 between pp. 530–531.
   Filsinger, 310–311, 511, 517, 520.
   Latin American Year Book (1919), 47–48, 170–171, 218–219, 255, 286–285, 341, 401–403, 472, 526, 542.
   Verrill, ch. 8. For each country a section discussing "Oceanic Transportation" is given.
2. How much does the Panama Canal shorten the routes between the United States and Latin America?
   References: Tarr & McMurry, 88.
   Filsinger, 306–308.
   Smith (C. & I.), 350, 294–295, 566.
   Smith (I. & C. G.), 714–715, 835–838.
   Pamphlet, Panama Canal—What It Is—What It Means.
3. How are the trade routes affected by the fact that South America has so few good harbors?
   a. Where are the chief harbors?
   b. Why does Latin America have so few good harbors and seaports?
   c. Why does this make the building of railroads and good wagon roads particularly important?
   d. Where has the coast line been sinking or rising?
   e. Have glaciers helped in the formation of harbors?
   References: Tarr and McMurry, 172, 236–238.
   Smith (I. & C. G.), 794.
   Robinson, 278–279, 286–287.
4. How in the past, has our lack of a merchant marine affected the

transportation of goods between the United States and Latin America? In what way has this condition been changed?
References: Verrill, 7–8.
World's Work, 35: 172–186.

5. What use is made of railroads in shipping goods between various parts of Latin America and the United States?
   a. What are the difficulties in railroad building?
   b. Where do the railroads furnish adequate transportation in Latin America?
   References: Koebel, 68, 69, 70–72, 73–74, 113, 315–316.
   Filsinger, 395, 399, 405, 408, 414, 420, 423, 427, 433, 437, 444, 447, 450, 455, 457, 461, 464.
   Latin American Year Book (1919), 43–35, 81–84, 101–102, 165–168, 216–218, 251–256, 269, 291, 316, 317, 346–347, 413–416, 461–462, 474–475, 486–487, 501, 516, 528, 529, 545–547.
   Smith, (C. & I.), 315, 316, 318–319, 342, 349; map, 324–325.
   Smith, (I, & C. G.), 712–713, 783, 789–790, 791–792, 796–799; map 780.
   Tarr & McMurry, 175, 247, 252, 253.
   Robinson, 259–261, 265, 277–279, 285.
   Adams, 329–330, 346, 357, 365, 367, 370–372.
   Rocheleau, 285, 286, 292, 295, 296, 297, 302.
   Carpenter, 115, 119, 121.
   Ross, 3, 19–20, 22, 44, 48, 101, 114, 117–118.
   Pamphlets on Latin American countries.
6. In what parts of Latin America do the rivers furnish transportation?
   References: Koebel, 70, 108–110, 112–113.
   Filsinger, 395, 405, 414, 423, 427, 433, 444, 450, 461, 464.
   Latin American Year Book (1919), 45–46, 84–85, 101–102, 230, 249–250, 311–312, 486–487, 500, 528, 545.
   Smith (C. & I.), 318–319, 329.
   Smith (I. & C. G.), 782–783, 785, 788–789, 790–791.
   Tarr & McMurry, 243, 247.
   Robinson, 277, 278, 279, 284–285.
   Adams, 337–338, 341, 349, 355, 373.
   Rocheleau, 292, 303.
   Chamberlain, South America, 52.
   Pamphlets on Latin American countries.
7. Why is the use of the rivers for transportation restricted in some places?
   References: Latin American Year Book (1919), 250, 311–312, 462, 487, 545.
   Smith (C. & I.), 329.
   Pamphlet, Bolivia, 27.
   Pamphlet, Paraguay, 28.
   Pamphlet, Venezuela, 29.

Carpenter, 35.
Tarr & McMurry, 254.

8. What are the difficulties of transportation where there are neither rivers nor railroads?
   References: Koebel, 71, 108.
   Latin American Year Book (1919), 45–46, 85–87, 173, 223.
   Smith (C. & I.), 318–319, 348, 349.
   Smith (I. & C. G.), 785.
   Tarr & McMurry, 174, 253.
   Verrill, 37.
   Robinson, 261, 265, 276, 277, 285.
   Adams, 356, 372.
   Rocheleau, 286, 292, 293, 295, 297.
   Carpenter, 97–98.
9. What do we need to know about transportation facilities in Latin America in order to pack our goods properly?
   References: Verrill, 30–38.
   Koebel, 153–159, 164, 299–300.

o. To what extent does Latin America compete with the United States in the world's trade?
   1. For the trade of what countries is there competition?
      References: World Almanac (1919), Statistics of imports and exports for United States and Latin American countries.
      Statistics for importation of corn, meats, sugar, mineral oils, wheat from Latin America into United States.
   2. In what products do the United States and Latin America compete?
      References: Material concerning similarities and dissimilarities for each industry common to the United States and Latin America. References for this can not be definitely given. This problem must consist of a review of the industries of Latin America from the standpoint of their likeness to the same industry in the United States.
   3. What conditions make it possible for Latin America to compete with us?
      References: Latin American Year Book (1919). Look for discussion under each country of the wealth in resources of that country.
      Tarr & McMurry, 174, 246, 247.
      Smith (C. & I), 280, 340.
      Adams, 331, 332–333, 355, 360–363.

p. Should we help develop the resources of Latin America?
   1. Why have the Latin American people not developed their own resources more fully?
      a′ How much have their characteristics such as energy, race, and habits of thrift hindered this development?
      References: Tarr & McMurry 173, 175, 177, 241, 242, 246, 249.

Smith (C. & I.), 310–311, 320, 341.
Robinson, 255, 256, 258.
Rocheleau, 284, 286, 289, 293, 297, 298.

b′ Where have the conditions of soil, climate, or topography hindered them?
References: Tarr & McMurry, 254, 255.
Smith (C. & I.), 334, 336, 341, 345, 349.
Adams, 328, 329, 336, 343, 365, 370.
Robinson, 256, 268.
Rocheleau, 285.

c′ How greatly has lack of fuel or other source of mechanical power restricted the industrial development in Latin America?
1′ Where and how extensive are the coal reserves?
References: Pamphlet, Coal Resources in the Americas.
Rocheleau, 284, 294, 295, 296–297, 302, 304.
Carpenter, South America, 144–148.
Tarr & McMurry, 245, 247, 251, 254.
Latin American Year Book (1919), 14, 112–115, 186–187, 234–235, 259, 307, 489–490.
Koebel, 117–119.
Smith (I. & C. G.), 386.
Smith (C. & I.), 349.
World Almanac (1919), 415.
Adams, 332, 366.
Robinson, 258, 259, 275, 283.
Pamphlets, Ecuador, 25; Chile, 20–22; Colombia, 17; Mexico, 42; Haiti, 13.
2′ How much water power do the rivers furnish?
References: Koebel, 122.
Latin American Year Book (1919), 147–148, 389, 538–539.
Smith (I. & C. G.), 403, 800.
Robinson, 276.
Tarr & McMurry.

d′ Where has there been such a scarcity of labor as to restrict development?
References: Adams, 339, 343, 355, 358, 370.
Rocheleau, 294.
Smith (C. & I.), 324.

e′ In what places in Latin America has the lack of transportation facilities seriously handicapped the development of resources?
References: Rocheleau, 293, 294, 306.
Tarr & McMurry, 251, 252, 253.
Smith (C. & I.), 319, 349.
Robinson, 258, 261, 265, 276–277, 286.
Adams, 337, 339, 342, 374.

f′ To what extent have the Latin American people lacked the capital

necessary for the development of their resources?
References: Rocheleau, 297.
Adams, 355.
Tarr & McMurry, 175.
Latin American Year Book (1919), 63–64, 174–175, 419–420, 539.

2. How are we helping develop the resources of Latin America either through the work of our trained men or by the investments of our capital?
References: Rocheleau, 284.
Latin American Year Book (1919), 189, 419–420.
Filsinger, 6–7, 529.
Proceedings of the Pan American Commercial Conference of 1911, pp. 82, 84.
Robinson, 261–262.
Tarr & McMurry, 175.
Smith (I. and C. G.) 801.
Pan-American Magazine, Vol. 29. July, 1919. "Investment of United States Capital in Latin America."
Same, May, 1919, "Opportunity for American Capital in Chile."
Same, Vol. 28, Jan. 1919, p. 122, "New Branches of the National City Bank."
Same, p. 168, "American Chamber of Commerce in Columbia."
Bulletin of the Pan American Union, Vol. 47, pp. 713–174. "American Chamber of Commerce of Columbia."
Latin American Year Book (1919), 23.

II. What can be done to help the people of the United States and Latin America understand each other better?

1. What should we know about the people themselves?
   a. What do we need to know about the manners, customs, and national characteristics of the people?
   References: Verrill, 12–19.
   Tarr & McMurry, 176–177, 241–242.
   Filsinger, 124–126.
   Koebel, 58–60, 76–77.
   b. What progress have the Latin American countries made in developing better governments?
   References: Pamphlet, "Contrast in the Development of Nationality in Anglo- and Latin America," 9–14.
   Pamphlet, "A Glance at Latin American Civilization."
   Tarr & McMurry, 242.
   c. What achievements have the Latin American people made in art, music and literature?
   References: Coester.
   Literary Digest, 53; July 8, 1916, p. 70.

Harper, Vol. 112, Jan. 1906, pp. 255–257.
Pan American Union Bulletin, Vol. 32, pp. 205–220.
Winter, Argentina & Her People of To-day, p. 242.
Winter, Brazil and Her People of To-day, pp. 227–229.
Winter, Chile and Her People of To-day, pp. 461–652.
The Bookman, Vol. 41, July, August, Sept. 1915, pp. 382–392, 478–489.

d. What knowledge of Latin America is gained thru travel and books on travel?
References: Bryce.
Hirst.
Fountain.
Roosevelt.
Pamphlet, "Our Opportunity in Latin America," pp. 6–7.

2. What can we do to make the people of Latin America understand us better?
   a. How is the Pan American Union helping?
   Reference: Pamphlet, "Pan American Union—Peace, Friendship, Commerce,"
   b. What steps have been taken to encourage students from Latin America to attend American institutions of higher learning?
   References: U. S. Bureau of Education: Bulletin 1915, No. 27, "Opportunities for Foreign Students at Colleges and Universities in the United States," p. 58.
   Outlook, 104: pp. 782–783.
   Scientific American, 111: p. 311.
3. What organization is attempting to bring the United States and Latin America in closer and more friendly relations?
   a. Why was the Pan-American Union formed?
   b. How are its officers chosen?
   c. What methods does it use to accomplish its purpose?
   d. What has it accomplished?
   References for a, b, and c: Pamphlet "Pan-American Union—Peace, Friendship, Commerce."
   Pamphlet, "Our Opportunity in Latin America," p. 4.
   Pamphlet, "Proceedings of the Pan-American Commercial Conference for 1911," pp. 22, 24, 26, 27, 114, 219, 252, 256–257.
   Verrill, 217–218.
4. How does the Monroe Doctrine affect our relations with the Latin American republics?
   a. Why was the Monroe Doctrine first put forth?
   b. What interpretation is put upon it at the present time by the United States?
   c. When has it been called into use?
   d. What is the attitude of the Latin American countries toward it?
   e. To what extent does the Monroe Doctrine affect our present relationship with Mexico?

f. Why are we especially interested in Cuba?

References: Pamphlets, "A Pan-American Policy—The Monroe Doctrine Modernized."

"Proceedings of the Pan-American Commercial Conference for 1911," pp. 54, 177.

"Address of John Barrett before the Illinois Bar Association on Feb. 19, 1916," pp. 13, 14, 15, 23-24, 25-26.

The textbooks on the history of the United States are very good general references.

5. Summary: How is a better relationship in the future to be brought about?

a. What need do we have of exact knowlehge and keener appreciation of Latin American civilization?

b. What can we do to increase our trade with Latin America?

c. What will be the influence of the Panama Canal on the trade relations of the future?

d. In what ways can the Monroe Doctrine be applied to present conditions?

e. In what directions can the Pan-American Union expand its work?

f. How will the improvement of transportation and communication affect our relations?

C. *Bibliography*

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Opportunities for Foreign Students at Colleges and Universities in the United States. Government Printing Office, Washington, D. C.
Verrill, A. H.—*South and Central American Trade Conditions of Today.* Dodd, Mead & Co., N. Y.
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Pamphlets and Publications dealing with Latin American countries, industries and problems in general, including a pamphlet upon each country, published by the Pan-American Union. A list of these publications may be secured upon request of John Barrett, Director General of the Pan American Union, Washington, D. C.
Winter, N. O.—*Argentina and Her People of To-day.* Page and Co., Boston.
Winter, N. O.—*Brazil and Her People of To-day.* Page and Co., Boston.
Winter, N. O.—*Chile and Her People of Today.* Page and Co., Boston.

Magazines and Periodicals

(No extensive use of magainzes and periodicals has been made in the references; they have been referred to only when the article seemed particularly worth while and the information given could not be secured elsewhere. Such publications as *The Bulletin of the Pan-American Union*, published monthly at Washington, D. C.; *The Pan American Magazine*, published monthly at 70 Fifth Ave., New York; *Inter-America*, published by Doubleday, Page & Co., New York; *The Americas*, published by the National City Bank, New York; the *Commerce Reports*, published at Washington, D. C., by the Department of Commerce, will be found very helpful.)

Magazines, with volume number referred to,

Bookman, 41.
Bulletin of the Pan-American Union, 32, 45, 47, 48.
Harpers Monthly, 112.
Journal of Political Economy, 25.
Literary Digest, 53, 55.
Nation, 106.
Outlook, 104.
Pan-American Magazine, 25, 27, 28, 29.
Review of Reviews, 53, 56.
Scientific American, 111, 116, 120.
World Outlook, 4.
World's Work, 35.

Maps

Maps used in the work will be such as textbooks on geography will furnish. The Irving National Bank, of New York City, has maps giving valuable information which will be sent, free, upon request.

X

EXERCISES IN MATHEMATICS

There is a widespread demand for examples which shall vary the monotony, the abstractness and the lack of contact with practical life of the usual textbooks. All the newer books are including examples which suggest attention to the daily interests of pupils. This demand has been followed in many localities by the collection of examples from tradespeople and store keepers in the neighborhood. During the war there was a large amount of material made with a view to promoting general thrift or support for the loans or purchase of war saving stamps.

MATERIAL FROM LOS ANGELES

Two pages of examples are reproduced herewith from a pamphlet issued by the *Los Angeles City School District* under the title "*Supplemental Problems in Arithmetic for Use in Rural Schools.*"

Rural Arithmetic Problems

68. Clara has 15 rows of radishes with 20 in a row. If she puts them into bunches of 12 each, how many bunches will she have?
69. If she sells them at 5c a bunch, how much does she get?
70. James buys 50 bunches of onions from Henry at 3c a bunch. He sells them for 5c a bunch. How much does he make?
71. Eddie sells 15 melons on Monday, 16 on Tuesday, 19 on Wednesday, 17 on Thursday, 13 on Friday, and 20 on Saturday. How many does he sell? At 5c each how much money does he receive?
72. Jane picked 21 boxes of berries on Saturday and 23 on Monday. How much did she make at 3c a box?
73. George picked 19 boxes of peaches and 9 boxes of plums at 5c a box. How much did he earn?
74. Paul cut 67 boxes of peaches the first week, 65 the next week, at 6c a box, how much did he earn?
75. Myrtle picked 98 boxes of berries and 57 boxes of currants at 3c a box. How much did she make?
76. Carl planted a bed 4 ft. wide and 8 ft. long. If he planted onions with the rows the long way 1 ft. apart and the plants 6 in. apart, how many onions were there?
77. Harold worked 8 hrs. on Monday, 9 hrs. on Tuesday, 10 hrs. on Wednesday. At 14c an hr. how much did he earn?

78. If turnips are planted 4 in. apart, how many will there be in a garden of 5 rows 10 ft. long?
79. What can you get for these turnips at 5c a bunch if there are 6 in a bunch?
80. Frank sold 37 doz. oranges one day, 28 doz. another day. How much did he get if they were 15c a doz.?
81. Arthur got 11 doz. eggs on Monday, 13 doz. on Wednesady, 11 doz. on Thursday. How many in all?
82. What are they worth at 43c a doz.?
83. Joe paid 10c a doz. for 45 doz. oranges. How much did they cost?
84. He sold them at 15c a doz. What did he make?
85. Clyde gets 5c for every gopher he traps. How many must he catch to get 25c?
86. Irene sold 14 melons a day for 5 days. If they were 8c each, what did she make?
87. We have 35 cakes of maple sugar to sell for the Red Cross. At 5c each, how much money will we take in?
88. We paid 3c a cake for the sugar. How much did it cost?
89. How much did we make on the sugar?
90. If eggs sell at 38c a doz., how much must you pay for 24 doz.?
91. Farmer Jones brought 4 doz. eggs to the grocery store for which the grocer allowed him 35c a doz. in trade. He then bought a lb. of coffee at 35c, 2 lbs. of tea at 60c a lb. and 50c worth of sugar. Did Mr. Jones owe the grocer or the grocer owe Mr. Jones?
92. If a girl picked up 20 rows of potatoes in an hour, how many rows can she pick up in 8 hours?
93. If Joe picks up 40 sacks of potatoes from an acre, how many sacks will he get from 55 acres?
94. If I work in a potato patch and get $2.00 for 8 hours' work, how much will I get in 1 hour?
95. If May can pick up 3 sacks in one hour, how many sacks will she pick up in 4½ days working 8 hours a day?
96. If I pick up 1 lug box of potatoes in 5 min., how many will I pick in an hour?
97. How much oil will I burn in a month if I use 1½ gal. a week?
98. If I pay 10c a gal., how much will it cost me in a year?
99. If a hen lays an egg every day for 6 months, how many eggs does she lay?
100. If I pay 6c each for hatching, how much must I pay for 100 eggs?
101. If Mrs. Taylor puts up 150 qts. of fruit, how many gals. does she put up?
102. Mrs. Burncrott dried 300 lbs. of peaches and sold them at 10c a lb. What did she get for them?
103. If Antisdell's cow gives 2½ gal. of milk a day for a month, how much will it be worth at 6c a pint?
104. When eggs are 64c a dozen what are 31 dozen worth?
105. Broilers are worth 40c a lb. What will 5 be worth if they weigh 2 lbs. each?
106. Feed sacks are worth 6c each; how much will Joe get for 42 sacks?
107. James picked 4 boxes of peaches from 1 tree; how many should he get from 17 trees?
108. May bought 600 baby chickens. 24 died and there were 231 roosters. How many pullets did she have?

109. Robert's father gave him 3c for each gopher he caught, how many must he catch to earn 45c?
110. Albert paid 50c for eggs, 65c for sugar and 70c for butter. What were they all worth?
111. Tommy sold 7 boxes of plums at $1.25 a box. How much money did he get?
112. Mary sold 3 doz. eggs at 65c a doz. How many lbs. of flour at 5c a lb. can she get for the money?
113. Arthur bought 500 chicks at 16c each, what did they cost?
114. When it takes a gallon of gasoline to go 18 miles, how far will 4 gallons take you?

MATERIAL FROM OSHKOSH, WISCONSIN

In the field of mathematics beyond arithmetic there is going on a great deal of experimenting. Some of the most valuable of the innovations attempted have to do with the incorporation of geometry into the work of the lower schools. A contribution from *Mr. Fletcher, of the State Normal School, Oshkosh, Wisconsin,* illustrates this type of work.

These sample lessons in concrete geometry are taken from the course now being taught to seventh-grade pupils in the training department of the State Normal School at Oshkosh. Each pupil is given a lesson sheet on which is outlined a problem to be solved, together with considerable discussion and help in solving the problem by some method of geometry. Space is allowed on the sheet for doing a certain amount of construction drawing necessary to complete the ideas then being studied, and some additional blank sheets are furnished for other work, such as drawing, paper cutting for superposition, trial work in experimenting. Besides this geometrical drawing there is carried on in the schoolroom, around the buildings, and on the grounds, a great deal of work in estimating distances, measuring, simple plane-table surveying, together with occasional more extended trips of observation to study applications of geometry found in the environment.

Each pupil is equipped with a drawing board, T-square, two small triangles, protractor and compasses. These simple instruments make it possible to do a great deal more experimenting to learn the truths of geometry in a concrete way than would be possible otherwise. Each pupil keeps his completed work in an envelope.

The major part of the class period is spent by pupils in solving the problems placed at the head of the sheets. The teacher assists

individuals and gives additional material to those who advance more rapidly than the rest of the class. The sheets thus form a minimum which is to be accomplished by everyone in the class.

The type lessons here presented are not consecutive, nor are they arranged in the order in which they follow one another in different parts of the course.

The course as a whole is intended to furnish pupils a definite set of notions regarding space relations, with reference to those applications of geometry which are a part of their immediate environment. Measurement, construction, estimating, designing, observation, and appreciation of applied geometry form the work of the course. Much of the manipulation of the truths of geometry is secured in the ways suggested by the lesson sheets. The aim is primarily to teach the subject by so presenting it that the pupils are enabled to sense the various facts and thus to become thoroughly familiar with the various relations of magnitudes and to understand the importance of space relations in their environment.

Not over a fourth of the propositions from Plane Geometry form the basis of the work. The propositions that are found to be applied in daily life are treated from a strictly concrete standpoint. There is no attempt to prove, by any logical system whatever, any of the statements made. Proof consists, whenever demanded by children, in measuring and superposition.

The course is being given to 7B pupils twice to 7A pupils three times, each week.

Sample Lessons in Concrete Geometry

Lesson A. The Protractor. Whenever we need to measure an angle we need to know how to use an instrument called a "Protractor." This is shaped like a semicircle, with two rows of figures around its curved edge. There is a series of division marks around its outer edge, also there is a series of division marks around the inner edge. Each space means a degree. Examine your protractor. How many degrees are there? How many degrees would there be in a whole circle? In early times it was supposed there were 360 days in a year. So they divided the circle into 360 degrees or equal parts. Then they used the degree to measure angles. If you place the point of your compasses at the vertex of an angle and draw a curve, you can find out how large the angle is by measuring the degrees in this curve.

To measure an angle with the protractor we do as the figure shows below. You will notice that the protractor has a point like the center of a semicircle. Study the figures below. Where is this point to be placed on the angle? Place your protractor

on the angle at the right below and measure the angle. Do the same with the angle at the left. Note the value of each angle on a piece of paper. Draw any sized angle you wish on a piece of paper. Measure it. Note its value. Exchange with your neighbor. Each measure the angle just passed to you. Write its value in the angle and return to the one who first drew it. Compare the value found with the one your neighbor found.

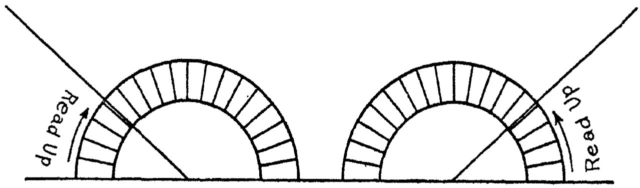


Fig. 1. Angle opens to left.
Use outer set of figures.

Fig. 2. Angle opens to right.
Use inner set of figures.

The two sets of figures upon the protractor are for convenience in measuring angles. If the angle opens toward your *right*, use the inner set of figures and *read upwards* from the *right end of the instrument*. If the angle opens toward the left, use the *outer* set of figures and *read upwards* from the *left end of the instrument*. (Figs 1 and 2.)

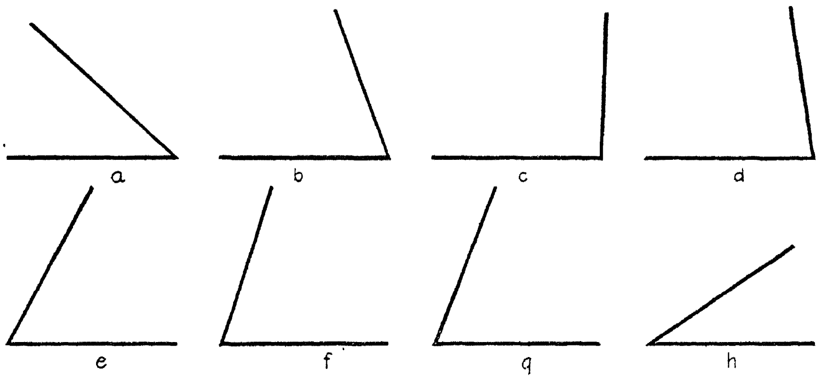


Fig. 3

With your protractor measure each of the angles—a, b, c, etc., of Fig. 3, and write the value of each on a separate sheet. Compare your results with those obtained by your neighbors. Which angles are acute? Which are obtuse? Which sets of three could be used to make a triangle?

In order to answer this last question you need to know how many degrees there are altogether in the three angles of a triangle.

In the space beside Fig. 4 make a triangle whose base is one inch and its two sides each 2½″. To do this first draw the base, one inch. Use compasses; open to a radius of one and a quarter inches. From B as a center strike a short arc; do the same from A as a center, as in the figure. Draw AC and BC. Measure the angles A, B, and C. Place the value of each angle in the figure where 1, 2, 3 are. Add these three values and place the sum in the middle of the triangle.

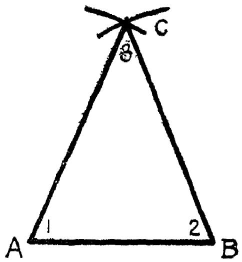


Fig. 4.

Now make a triangle by crossing three lines, like Fig. 5. Measure the three angles and find their sum as before. Try this same thing with two additional triangles. What do you find is the sum of all the angles of a triangle?

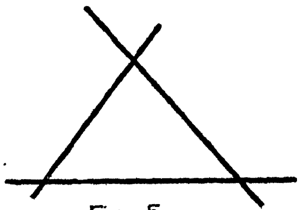


Fig. 5.

Complete this statement: The sum of all the angles of a triangle is equal to....... degrees.

Return to the angles a, b, c, etc., of Fig. 3, which you have measured. Group them into groups of three, as a, d, e (that is, if the sum of those three angles equals what sum?). How many groups of 180° are there?

Draw a line 2 inches long. Use this for the base of a triangle. Use two of the angles from one of the groups you have just made and make angles at either end of this base line equal to these two you have chosen. Prolong the sides of these angles until

they meet. Measure the third angle thus formed. Does this angle added to the two you started with equal 180°? Check your work by a second measurement and try to get the correct result.

Problem: To survey a plot on the school grounds and make a drawing of it to scale.

In Fig. 6 you will see a drawing of a four-sided plot of land. One way to find the values of the four angles would be to place a protractor on the ground at the vertex of each angle, as indicated in the figure. What would be the objections to this method? (Hard to find the vertex of the angle. Awkward to do). It is hard to find the values of the angles in this way.

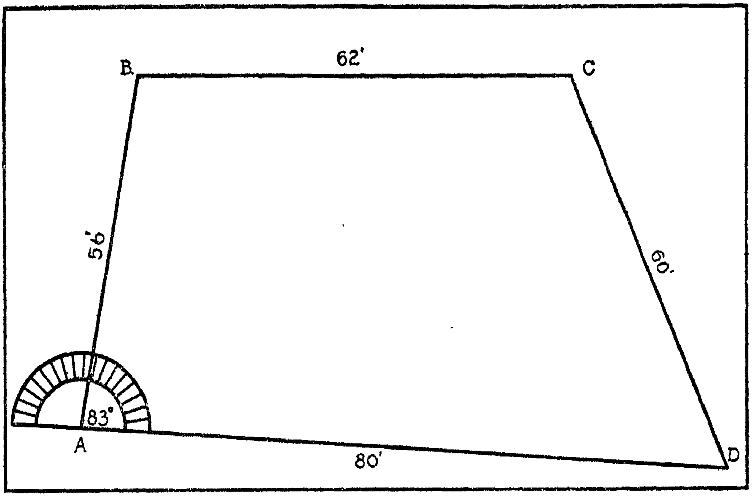


Fig. 6

There is a method of using the protractor to measure these angles that is much more accurate. Instead of placing the protractor directly on the ground we place it directly above the vertex of the angle. To do this we use an instrument called a "Tripod Transit." This instrument is made by fastening a board 11 inches by 14 inches upon a camera tripod so that the center point of the board is exactly above the screw of the tripod. Two light lines are drawn on the board from A to C and from B to D. A pin is then placed at the point of their intersection. A plumb bob is hung from the screw directly beneath this pin.

To measure an angle we set up the tripod so that the plumb bob is directly above the vertex of the angle. This places the pin directly above the vertex of the angle. The board must be level, so we use a pocket level. If we place a protractor on the board as shown in the Fig. 7, we can measure the angle, as at A in Fig. 6.

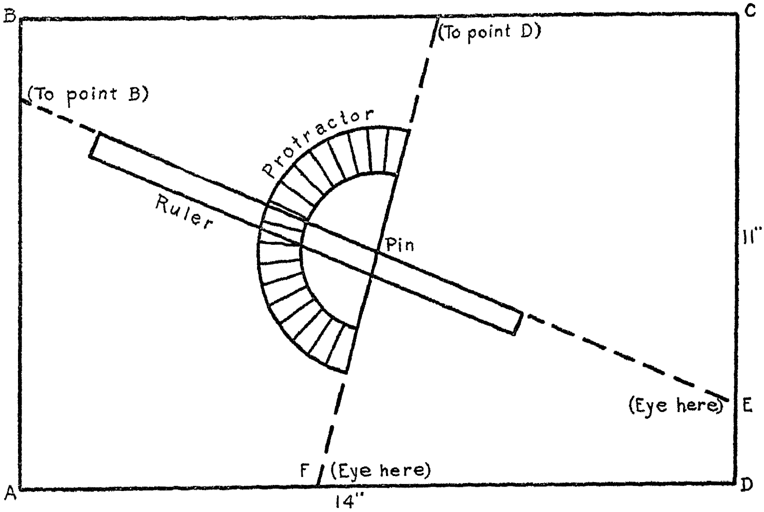


Fig. 7

Before going outdoors to survey we shall need to know how to handle the tripod transit. An angle has been drawn on the floor in the front of the room. You will each measure this angle or some other that you may wish to draw on the floor, using the tripod transit, and in the space below make an angle equal to the one you survey, writing its value in the angle. Choose two other pupils to assist you in measuring your angle. The others are each to hold a stake on the side of the angle to assist you in sighting. The stakes must be held perpendicular to the floor.

(Second period.) Outdoor trip. Groups 1 and 2 survey the plot of land at the sound end of the building, beginning at opposite corners. Each member of a party is to survey at least one angle. While not surveying, he is to assist in measuring the sides of the plot. Accurate notes are to be kept. Make a sketch of the plot and place the measurements on the sketch, as in Fig. 6, yesterday's lesson.

Groups 3 and 4 will survey the plot on the east side of the gymnasium. Each member of a group is to measure at least one angle and when not surveying, to assist in measuring by holding poles and by measuring distances with the tape. Keep accurate notes; make a sketch and put the measures directly on the sketch.

Each group mark the north and south line on the sketch. Consult the weather vane on the industrial building for your directions.

In the space below draw your plot to scale from the data secured outdoors. In case of difficulty over a proper scale, consult the teacher.

Lesson. B. Problem: To design linoleum patterns of different kinds, using the equilateral triangle as a basis.

In designing patterns for linoleums, wall-paper, floors, sidewalks, and such things, various geometric figures are used. Whatever figure is chosen is repeated a great many times to cover the space. Some of the most common forms used in such work are the

square, the oblong, the triangle, and the hexagon. In this lesson we shall make use of the equilateral triangle to design various linoleum patterns. At first we shall use this triangle in its simplest way, so that the pattern will be composed entirely of triangles.

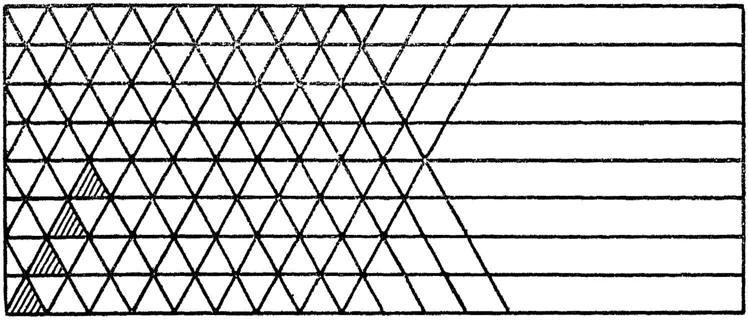


Fig. 8

Study Fig. 8. What instrument shall we use to draw the horizontal lines? The oblique lines? We shall space the horizontal lines one quarter of an inch apart. How far apart shall we space the oblique lines? Notice that the oblique lines begin at the left side at the end of *every other* horizontal line. In the space below draw the figure, making it 6 inches long and 2 inches wide, spacing horizontal lines $\frac{1}{4}$ inch apart, and filling in the whole of the oblong with oblique lines running in each direction. Such an arrangement of lines is called a *network* and is used a great deal in designing certain kinds of patterns.

(Class draws as directed above in space on sheet provided.)

After you have drawn the network, with pencil or colored crayon shade every other triangle (as shown in the figure). Use about one third of the left side of the network to make this simple design. Use triangles only. If you use two colors, choose two that go well together. Observe the various color combinations posted on the bulletin board. If you wish to choose a different combination from any that you see, consult the teacher first. Compare your finished design with those posted on the walls of the room and with those your classmates have been making.

(Assignment of home work.) In preparation for the next exercise look for as many different patterns as you can find which have been made by the use of this network. Observe sidewalks, houses, walls, and other things seen on your way home and back. At home, study the uses made there of this network scheme. Whenever you think you find such an arrangement, make a sketch of what you find and bring it to class to assist you in the next work we shall do.

(Second period's work.) In the remaining part of the network which we did not use at the last exercise we shall lay out a design in which the triangles are grouped together to form a regular pattern. Before doing this look at the network again. On a piece of scratch paper sketch the different figures you see that are formed of triangles. Fig. 9 shows some of the figures that appear.

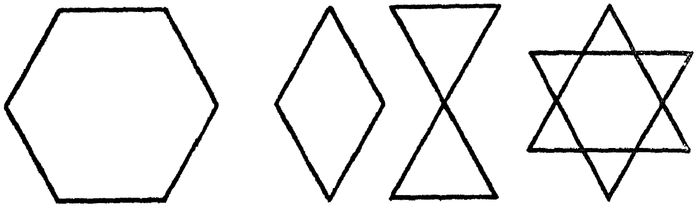


Fig. 9

Choose the figure you wish to use in making your design and shade it lightly wherever it appears in the network. If you use more than one figure to make your design, shade the figures that are alike by using lines that run in the same direction. In coloring use the same care as before, consulting the teacher, examining color combinations posted in the room, and comparing with your neighbors. Get the teacher's approval before beginning to color.

Lesson C. Problem: In crossing a lot of land a pipe line is to be carried under one corner of a building. The ditch carrying the pipe will go underneath the building at a distance of twelve feet from the corner on one side and come out eighteen feet from the corner on the other side. How many feet of pipe will be required to cover the distance across the corner.

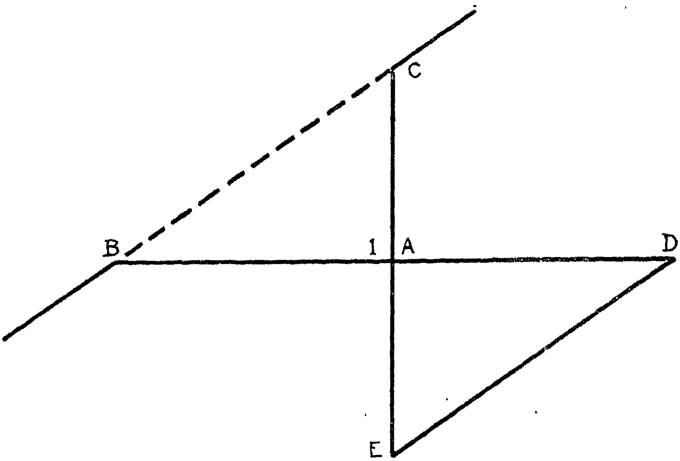


Fig. 10

In Fig. 10 the angle CAB represents the corner of the building. What is the value of this angle? You will notice that the pipe line forms a triangle with the two sides of the corner. We know the length of the two sides, AC and AB and the value of the angle 1. By geometry we shall be able to find the exact distance of the pipe line, represented by the line BC, even if we cannot measure it. It will be possible to do this

by constructing another triangle exactly like the triangle BAC and equal to BAC, in such a way that we can measure the side that corresponds to BC. *Remember* that BC is the side that cannot be measured.

It has been found that when we know the size of an angle, (like the angle 1), of a triangle, and the lengths of the two sides that include the angle, (like AC and AB), we can make a triangle exactly like the triangle we start with. All we need to know about the given triangle is the *size of one angle in it*, and the *lengths of the two sides including the angle that we know*. We do not need to know the size of the other two angles, nor the length of the third side, in order to make a triangle exactly like the one we are studying.

In the space below construct an angle like angle 1 above, making the side AB = 1½ inches; side AC = 1 inch. Prolong BA to the right so that it is twice its length; prolong CA downwards so that it becomes twice its length also. Label the right extremity of BA extended *D*; label the lower end of CA extended *E*. Draw DE. Measure DE.

Now draw a straight line from B to C, to represent the pipe line under the corner of the building. Measure BC. Write a statement about BC and DE.

The line BC ———— the line DE.

Compare the two triangles. What parts of each triangle are equal? Write your statements about the equal parts.

A common form of the rule which has helped us to find the length of this distance which we could not measure is: "Two triangles are equal if two sides and the included angle of one triangle are equal to (complete this statement in your own words).

(Second lesson period.) To-day we shall take a trip to the school grounds to test the work we did the last time. The class will be divided into the same groups as before, four in a group, the captain to have charge of each group. Each group needs two stakes and a measuring tape or yard stick.

Group one measure the distance across the corner of the gymnasium, between the two marks you will find on the side of the building; Group 2 do the same thing upon the power house; Group 3, the auditorium; Group 4, the opposite corner of the auditorium from Group 3.

Take your pocket note-books. Sketch the corner you are to study. Keep notes. Each one in the group measure the distance you finally decide is the one equal to what you wish to find. Average the four measurements for each group. You will be unable to get into any of the four buildings we are to study.

Upon returning to the room, make a careful sketch to show that you have completed the work. State definitely the distance you all agreed upon.

Lesson D. Problem: A bridge is to be built across a small stream. Find the distance across the stream without leaving the bank on one side of the stream.

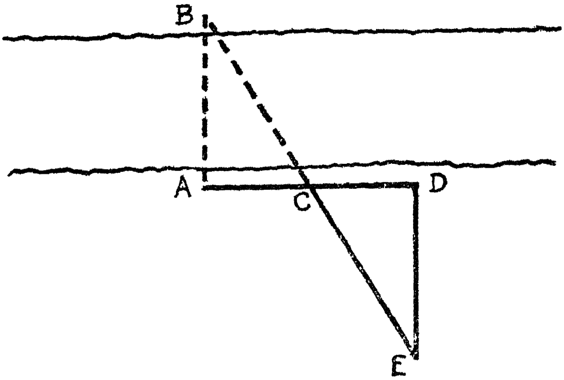


Fig. 11

In Fig. 11 AB represents the distance across the stream to be measured. (Distances which cannot be measured are always represented by dotted lines.) The measuring is to be done on the same side of the stream as the letter A. We have already measured an unknown distance where we knew what facts? (Two sides and the included angle.) If we were to form a triangle with AB as one side, how many distances could we measure? What do you think about using the method we already know in this case?

It has been found that when we know *two angles* of a triangle and the *side between these two angles*, a second triangle equal to the first can be found and by that means the third side of the first triangle can then be measured. All we need to know about the first triangle is the *value of two of its angles* and the *length of the side included between those* angles.

In the figure above let us form a right triangle with AB as one side. Why should we use a right triangle? If we form the right angle to the right of A, where will the other two sides be? Make the side along the bank one half inch long and label its right end C. Draw BC a dotted line. Why? In the imaginary triangle ABC what parts can we measure without leaving the bank?

We shall make another triangle equal to ABC, using only those parts we know. How far to the right shall we extend AC? Label the right end of this line D. What shall we do at D? (Form a right angle extending downwards.) Extend line BC downwards until it meets the line we last made and label their intersection E.

Name the parts of the triangle CDE that correspond to the parts in ABC.

What distance can we measure, without leaving the bank, that will give us the distance across the stream?

Complete this statement: "Two triangles are equal if two angles and the included side of one..

Lesson D. (Second period.) In the last lesson we learned how to measure across a stream without leaving one bank. State the truth of geometry that we used to do this.

Today we shall use the tripod transit outdoors to do a part of the work in measuring by this method. Take your lesson sheet of yesterday. At what points should we set up a transit if we were actually measuring across a stream by this method? (First at A; then at C; then at D.) At what points do we use a transit to make angles? (At A and D.) Why do we not need to make an angle at C? (The lines AD and BE crossing each other at C form equal angles.)

During the remainder of the period we shall survey a distance using this method. We could actually measure this distance, but shall imagine it is a stream. Each surveying group takes a tripod transit, pole, four stakes, measuring tape, notebooks. Group 1 measure an imaginary stream (Elm Street) at stake marked *No. 1;* Group 2 measure same street at stake marked *No. 2;* Group 3, Normal Avenue at stake marked *No. 3;* Group 4, distance at stake marked *No. 4* on Normal Ave. In each case the imaginary stream is to be the width of the street without sidewalks.

Make accurate notes in note-books and be prepared to draw your work at the next period.

XI
NATURE STUDY

Nature Study is one of the lines in which it is possible and even necessary to draw a great deal of material from the immediate environment of the school. It is quite impossible in textbooks to present the local problems of physics and zoology and botany which will come up if pupils are alert to understand their surroundings. From the large body of materials which came to the Committee. One example was selected. It was prepared by *Miss Elizabeth D, Zachari, of Louisville, Kentucky,* and shows how a series of topics can attacked by scientific methods.

MATERIAL FROM LOUISVILLE, KENTUCKY

The Water Supply of Louisville

This unit of work in science and community hygiene was developed by an eighth-grade class. Signs had been placed near the springs in one of the neighboring parks. These signs warned the public of the danger of the drinking the water of these springs. Many of the children remembered the time when these signs had not been there. They asked: Why is this water, which was thought to be pure, now considered impure? What are the sources of supply for these springs? The water is clear, why is it not pure?

The third question was answered by a Boy Scout, who gave his Troop Master and the Scout Manual as the authorities for his statements. He said that all clear water is not pure, but that all pure water is clear. He also emphasized the point, that Scouts are told to drink no water about which bugs and flies linger. Questions one and two were then considered. This discussion brought out the sources of springs, the question of seepage and the principle of natural filtration. The children decided that the springs had been contaminated by the seepage from the neighboring suburban homes.

The children became very much interested in natural filtration. This discussion brought out the following points: (1) How the

people of rural districts are dependent upon wells and therefore springs for their water supply. (2) The importance of drainage and seepage in relation to pure well water. The conditions on farms, which the children had visited, were recalled in this connection. (3) The relation between pure well water and the depth of the well.

Three boys, who were interested in the third topic, asked if they might be permitted to work it out. One decided to make a filter. Clark's *An Introduction to Science* was consulted. An old paint keg, having been cleaned, served the purpose. A piece of screen wire was stretched about two inches above the bottom of the keg. Then followed a layer of gravel; one of sand and the filter was complete. A second boy drew a diagram of the filter (Figure 1). He secured his idea from the diagram in Clark, page 342. The third boy was interested in the relation between the purity and depth of farm wells. He wished to express his idea by means of a graph (Fig. 2), so data were furnished him. The teacher's reference was Caldwell and Eikenberry's *General Science*, p. 170. The greater part of the work on this topic was done at home. When committee had completed the work, the reports were given to the class. The filter was demonstrated, the diagram explained, and the graph discussed.

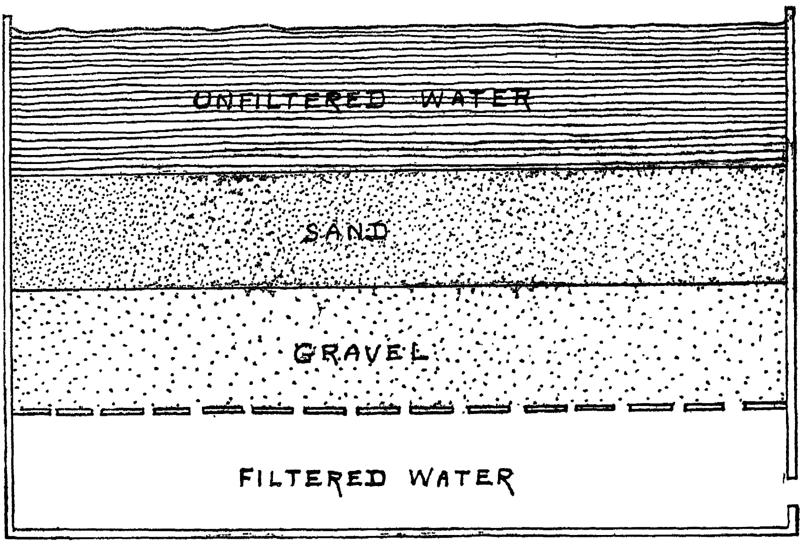


Fig. 1

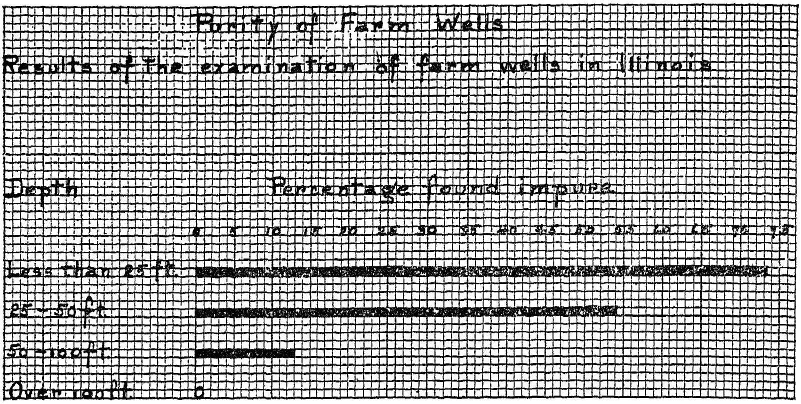


Fig. 2

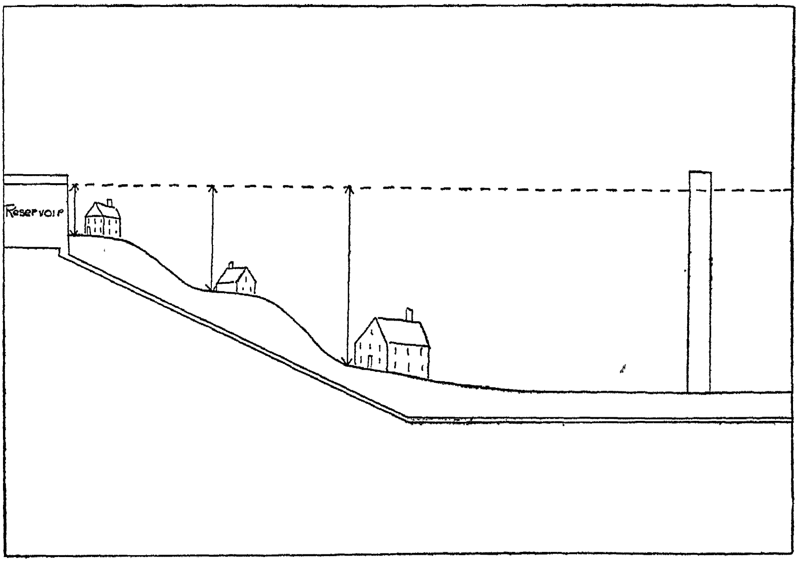
"The filtered water was clear; was it pure?" was asked. This led to a discussion of bacteria. The following points were discussed: (1) What are bacteria? (2) The kinds of bacteria. The fact that there are many harmless bacteria was emphasized. Also, one of the most harmful of bacteria—intestinal bacteria—the cause of typhoid, was discussed. (3) Rate and manner of increasing. (4) Conditions favorable for growth. Conn's *Bacteria, Yeasts and Moulds* was used as a reference.

The third and fourth points were not discussed until tests for bacteria had been made in petrie dishes. Water from an aquarium was used for one dish and from the school drinking fountain for another. (Water could not be obtained from the spring because of the severe weather.) The conditions favorable for the growth of moulds were discussed. The children thought that similar conditions would favor the growth of bacteria, therefore the petrie dishes were kept in a warm dark place for several days. The children now asked: "Why did the petrie dish containing the aquarium water have many colonies of bacteria, while the other dish had one colony of a harmless variety?"

The majority of the children knew of the Filtration Plant in Crescent Hill (the section of Louisville with the greatest elevation). A trip was planned. The pumping station on the Ohio River was not visited, because the trip would not justify the time required. The

reservoirs, the coagulating basin, the filtering beds and the underground storage basins were visited. It was found that the water was not only filtered through beds of sand and gravel, but also treated chemically. The chemist explained the simple tests which were made daily to make sure that a standard of purity was maintained. A committee of three children decided to make the Filtration Plant in the sand table, using plasticine for the modeling. Most of this work, and that of the other groups and individuals, was done in supervised study periods.

The location of the Filtration Plant furnished another topic for discussion. "Why was the Plant located in the highest section of the city?" Two boys selected this problem. Reference books were consulted. Finally, they found a simple experiment that would prove their point. A large bottle, a student chimney and a glass tube connected by rubber tubing and arranged at different levels made up the apparatus. A diagram (Fig. 3), showing that water pressure varies in different parts of a water system, was found in Clark's *An Introduction to Science.*



Water Pressure Varies in Different Parts of a Water System

Fig. 3

The water was pure when it came to the school. How was it kept pure? The sanitary drinking fountain and the public drinking cup were discussed, and the proper use of the drinking fountain was emphasized. One child drew a diagram of one of the school fountains (Fig. 4) and illustrated the proper use of the fountains.

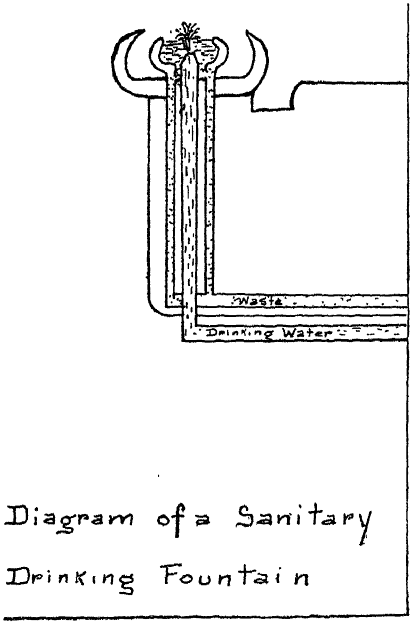
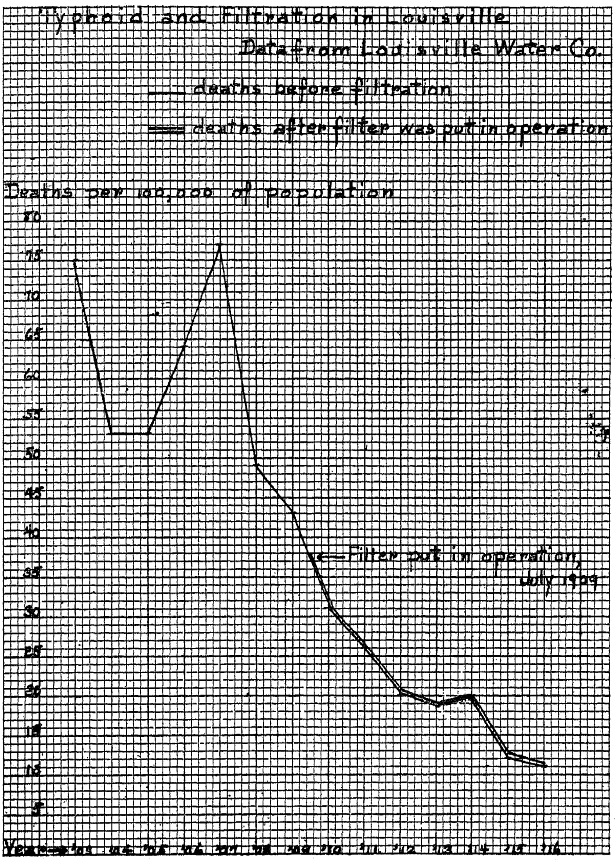


Fig. 4

The children now asked: (1) Did Louisville's Filtration Plant pay? (2) What have other cities done toward providing a pure water supply? (3) Did these cities find that it paid to supply their people with pure water?

A graph (Fig. 5) showing the relation between typhoid and filtration, was made from data secured from the Louisville Water Company. The relation between filtration and the mortality rate of the following cities was also shown by suitable graphs: (1) Pittsburgh, Pa.,[1] (2) Cincinnati, Ohio, (3) Albany, N. Y., (4) Lawrence, Mass.[2]

[1] Reference: Caldwell and Eikenberry, p. 165.
[2] References: Hunter's *A Civic Biology*, p. 385.



Typhoid and Filtration in Louisville
Data from Louisville Water Co.
deaths before filtration
deaths after filter was put in operation
Deaths per 100,000 of population
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
←Filter put in operation, July 1909
'10
'11
'12
'13
'14
'15
'16

Fig. 5

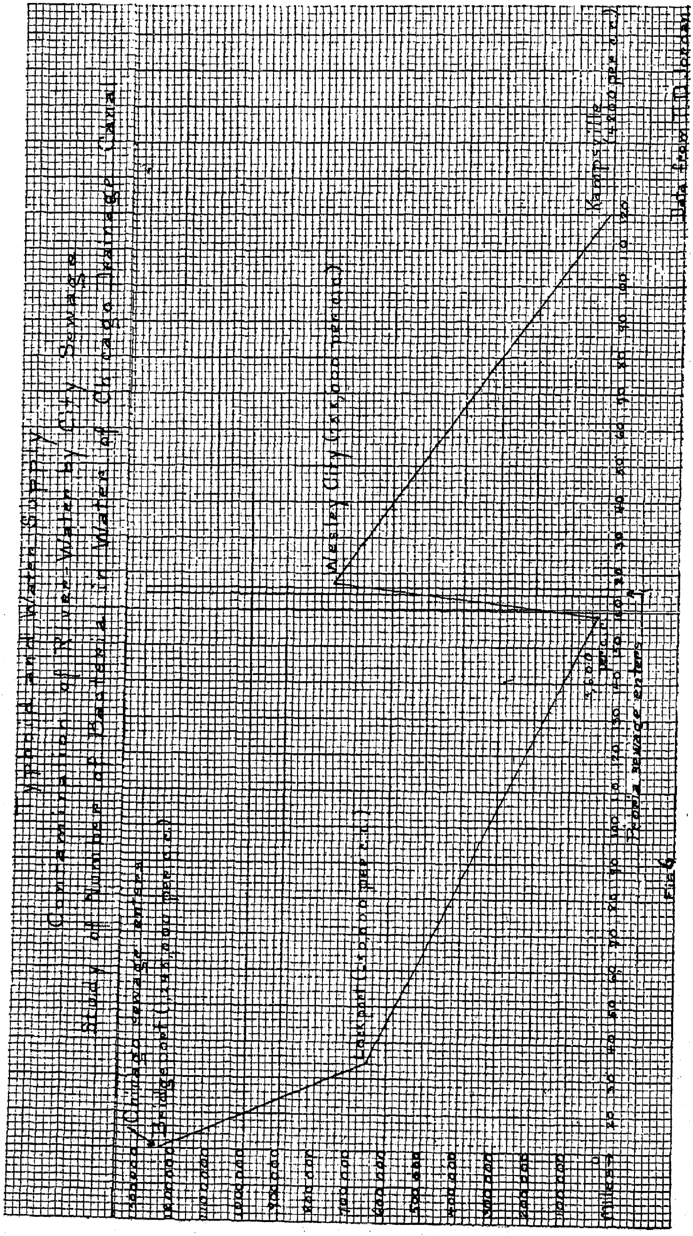

Typhoid and Water Supply
Contamination of River-Water by City Sewage
Study of Number of Bacteria in Water of Chicago Drainage Canal
Chicago sewage enters
Bridgeport (1,295,000 per c.c.)
Lockport (650,000 per c.c.)
Wesley City (26,000 per c.c.)
Peoria sewage enters
Kampsville (4,000 per c.c.)
Miles
Fig. 6
Data from E. O. Jordan

Fig. 6

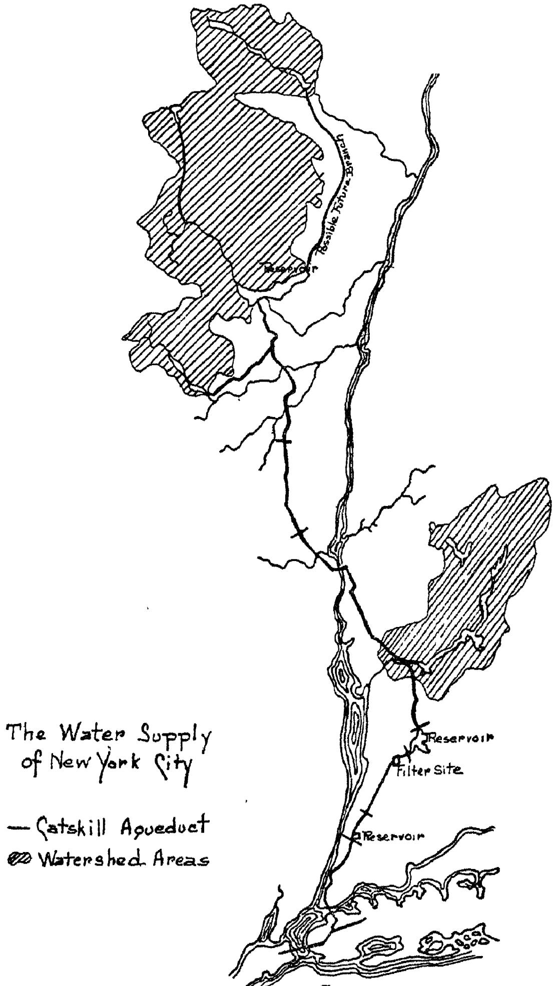


Fig. 7

Chicago solved her problem in a different way. Her sewage, after 1900, no longer passed into Lake Michigan, but was carried by means of the Chicago Drainage Canal into the Illinois River. The children were told that St. Louis objected to the building of the Canal, because, it was claimed, the source of her water supply was being contaminated. The children thought it impossible for the water to contain as many bacteria per cubic centimeter after flowing a certain number of

miles. However, they had no idea of the relation between the number of bacteria per cubic centimeter and the distance of flow. Supplementary books were consulted, and the following facts found: (1) Bacteria may settle to the bottom of the river along with other sediments, (2) Bacteria may be killed by exposure to air and sunlight. No accurate data were furnished by the supplementary books, but certain statistics secured from the records in the science laboratory were used. One child brought out the significant facts of the data by means of a graph. A map showing the location of the Drainage Canal was made by another child. "Did the Canal pay?" was asked. Data from Caldwell and Eikenberry, p. 162, were given to the child who selected the topic. A graph (Fig. 6) was made.

How New York City brings her water from the Catskills was discussed by another child. A map (Fig. 7), which was copied from Caldwell and Eikenberry, was used to illustrate the report.

As has been said, most of the work was done in supervised study periods. Each child or group of children had a problem, which he worked out for himself or his group. The class was brought together when a discussion was necessary, or when a report which led to another problem was to be given. Notes were taken while the report was being given, then followed a class discussion.

It was then decided to give a Friday assembly exercise based upon this unit of work. First, the class discussed the selecting of the material, for the thirty-minute period was too short for all the detailed reports. As a child made a suggestion, it was written on the blackboard, criticized, rejected, accepted or changed until acceptable. In this way the children selected the best reports, and the clearest and most significant charts and graphs. After the program was planned, the apparatus for demonstration and the charts and graphs were arranged by the children. The planning, preparation, and giving of the program served as a summary of the unit of work.

The entire study, including the study time and the preparation for the program required nine weeks—two 30-minute periods per week.

The following books were available for reference reading:

Clark: *An Introduction to Science.*
Hodgdon: *Elementary General Science.*
Hunter: *A Civil Biology.*

Caldwell and Eikenberry: *General Science.*
Lake: *General Science.*
Willis: *Essentials of Health.*
Hoag: *Health Studies.*
Brown: *Health in Home and Town.*
Hutchinson: *Handbook of Health.*
Godfrey: *The Health of the City.*
Allen: *Civics and Health.*
Jewett: *Physiology, Hygiene and Sanitation.*
Ritchie: *Primer of Sanitation.*
Pamphlet issued by the Louisville Water Co.

XII

COMMUNITY LIFE

The field in which there has been in recent years the greatest amount of productive writing by teachers and pupils is that which is commonly known as civics. As indicated in the title of this section a somewhat broader title is more serviceable because it includes aspects of social study which are not directly related to government and the formal civic organization of the community.

The Committee has received a good deal of material of the kind which would be very well worth reproducing. Some of it is accessible in printed form. Some years ago (in 1911) the Board of Education of Newark, N. J., published a book entitled *Newark in the Public Schools of Newark*. This example was followed by several other cities. New Orleans published *The New Orleans Book* in 1915. In the same years Mr. S. O. Rorem, an instructor in business law and civics in the high school of Sioux City, Iowa, published a book entitled *How Sioux City is Governed*. In 1916 the Chamber of Commerce of Cincinnati published *The Citizens Book*. In 1918 the School System of Aurora, Illinois, published under the editorship of K. D. Waldo, principal of the high school, a mimeographed volume entitled *The Government of Aurora*. This is based largely on the handbook entitled *Government of Rockford*, as indicated in a prefatory note. The Committee recommends these books to the consideration of all school officers. They are full of very useful discussions of matters of community interest which every pupil can observe to some extent; they make school work concrete and relate it directly to present and future citizenship. No extracts from these books are reproduced in this *Yearbook* because it was deemed advisable to use what space could be devoted here to this type of material for contributions not otherwise easily accessible.

There have accordingly been selected for printing here three examples. The first is usable in the lower grades and was prepared by *Miss Estaline Wilson*, of *San Antonio, Texas*. The second is part of a course in general social science which is being given in the high

school of Springfield, Illinois, and required of all freshmen. The third is part of a course given in Lawrence, Massachusetts, under the title "The Meaning and Worth of Liberty," where it is used in a history course in the eighth grade of the Oliver School.

MATERIAL FROM SAN ANTONIO, TEXAS

Public Schools

How many pupils are there in your school? Find out and then try to imagine how many girls and boys there are in all the public schools in San Antonio, 20,000 in all, a small army of children.

You already know some of the things this army can do if it starts a crusade. It has already sold many dollars worth of thrift and war savings stamps. It has made thousands of wash rags, joke books, and other things for the soldiers and gathered clothes for the poor Belgians. (Exercises 1, 2, 3; see below.)

Our army isn't gathered into cantonments like the soldiers, but into 37 school houses. You know the names of the five army camps near San Antonio; now see how many names of schools you know.

The name of each school suggests a story of romance, adventure, business success, military or educational effort or some special citizenship and philanthropy. Because Mr. George Brackenridge and Miss Eleanor Brackenridge have led in giving to public education and welfare, their names are most frequent.

The name "Herff" and "Robert B. Green" recall important public and local service. The "McKinley" school honors a former president of the United States and "Harris" stands for an educator of world-wide fame. "Robert E. Lee" is in memory of a southern leader of the Civil War. Most of the names are from Texas History and shed the spirit of 1836 when Texas left Mexico and became a Republic.

The names "De Zavalla," "Navarro" and "Ruiz" show that Mexican citizens helped in this great struggle against Santa Anna as dictator of Mexico.

"Stephen F. Austin," as a colonist, led a wonderful life of adventure and the story of "Sam Houston" should be known to every Texas child as well as the stories of "Bowie," "Crockett," "Bonham" and "Travis," of Alamo fame. "Milam," "Johnson," "Fannin," "Smith," and "Briscoe" were soldiers and leaders in this period of Texas History, while "Lamar" and "Burnett" were men who led in civic affairs. "Margil" calls us back to the Mission period of our history, when the good priests labored with the "bravo" Indian and educated him into a "tame," or citizen, Indian.

The "Grant" school was named for a prominent colored bishop. "Cuney" and "Douglas" were colored men who led their race upward, while Paul Lawrence Dunbar's name will ever be carved into the hall of fame as a poet of the Southland. (Exercises 4–10.)

The government builds the army camps and pays for keeping them up, feeds and clothes the soldiers. Now let us think what it does for us. Did you ever think who it is that pays for the school buildings, pays your teacher, and the janitor, buys the coal, the crayon and erasers you use, pays for the water, the lights and the telephones in all these schools? We say the city government of San Antonio and the State of Texas

pay for these and some of the money comes all the way from the United States Government in Washington. But after all, who furnishes the money? Your mothers and fathers pay for all this when they pay their school taxes.

For every $100 worth of property and for every $100 in money which they have, they pay to the city 46 cents to run the schools. Of course, the people with the greatest amount of money pay the most, and wealthy people who have no children in school must pay their share just the same, and children whose parents haven't much money get the benefit of all this money which is spent on education.

All your parents, too, have a right to vote, to elect a school board which shall spend this money wisely and honestly and shall hire people to run the schools. Whom do they hire? (Questions 11–13.)

First of all, a superintendent (14), who then helps the board select principals and teachers. They work very hard to get the very best teachers they can find. Not every one who wants to teach is given a place. A teacher must not only have a good education and know all about these subjects she is to teach, but she must also go away to a school to learn the best way to teach arithmetic and reading and spelling, etc., to pupils, just as a doctor must go to learn the best way to make people well (15). All this is because the people who have charge of the schools want to be sure that the children in San Antonio have the best possible chance to learn.

Have you any idea what all this costs? For each one of you to go to school for 36 weeks it costs $40, more than that when you get to the high school. Here are some things for you to figure up. What does it cost for your whole room per year? Now figure what it costs per week and per day. Add to this what your books cost, your tablets, pencils and some of you your carfare and figure out what every day of school is worth to you in dollars and cents.

When you go home tonight, see how many of your parents know how much money is being spent on you (16). Since they pay part of it, they should know, shouldn't they? If you had tickets for a theatre bought and paid for, then didn't use them, who would be the looser? In what other way do you loose your money besides not attending school? Figure out what a holiday costs your school.

Sometimes there are so many pupils that new buildings must be had; the taxes are not enough to build these, so the city decides to borrow the money by selling bonds just as Uncle Sam borrowed money by selling Liberty bonds. Your parents again have the right to vote whether they want to do this or not. The last bonds the city sold enabled them to build the two new high schools, the "Robert E. Lee" and the "McKinley School."

If you are fortunate enough to be in these beautiful schools, you know how fine they are, and you also wonder what would become of all the pupils if we didn't have these new buildings (17–19).

Many of your fathers and mothers could tell you interesting stories of the schools which they attended. Once there was a school building where the Gunter Hotel now stands. The oldest buildings still in use are the Johnson School on South Flores Street and the Brackenridge Grammar School on South Alamo Street.

This last school was not a public school originally, but a private school. Once upon a time there were no public schools, and only people who could afford to pay a large price for it had any education. The peasants in Europe could neither read nor write

and it was only an especially gifted one who could solve the simplest problem in arithmetic. The men for whom the peasants worked kept all their books. The only people who really had much education were the priests, and for many years they were the only teachers, and the schools were supported by churches. Finally, people began to realize that there were many things that the church schools were not teaching and began to plan how to get money so that all children could go to school and be taught the things they needed to make them into good citizens. After many ways were tried, the people were at last convinced that they should pay taxes to support schools (20, 21).

There are several people who should be remembered because they worked so hard to establish free schools. Chief among these was Horace Mann, who journeyed up and down the country talking to the people. Not only did he urge the people to be liberal in giving money, but he also gathered teachers together and helped them improve their work. He helped establish normal schools where teachers are taught how to teach. Another man who did a great deal for schools was Henry Barnard, who started the first school magazine. Emma Willard and Mary Lyon were women who spent their lives working for education. To these names should be added a long list of persons who have spent their lives improving school conditions. Among these is William T. Harris, who has been dead but a few years and John Dewey, who should be known by all as the man who has done and is still doing more for school children than any other one person.

If some of your great-grandparents could tell about the schools when they were little, you could appreciate how much better your schools are and how much happier and freer school rooms are (22, 23). The old-fashioned schools were very strict. Masters knew no way of teaching except to use the rod. No pupil dared look off his lessons unless he could do so without the master seeing. One famous artist is said to have spent three weeks trying to solve an example in long division, for teachers did not help the pupils in those days. There were no dramatizations, no jokes to tell, no stories with interesting pictures, such as you have now. About the only book they had was the spelling book of Noah Webster.

To sit eight hours a day on the hardest of benches, puzzling over long, hard words; to commit to memory pages of words whose meaning they did not know; to read long chapters in the Bible and to commit to memory hymns; these were the things school children once had to do.

You would think that when all children had a chance to go to school that there would be no trouble in getting them there, wouldn't you? You know what happened when the army was called together last year. When the men were examined, it was found that a large number, eight out of every one hundred, could not read nor write.

The government has tried hard to get every one in school. Nearly all states have a law which compels children to go to school until they are fourteen years old. We were very proud of the fact that last year all of the pupils who finished the seventh grade in February went on to high school, and there we hope they will all be taught the things which will help them get on in life.

We hear much about democracy now-a-days. What does it mean? For boys and girls it means just this, that their government has said that everyone shall have equal

opportunities and that all shall have an education so that they will be prepared to make a good living and to enjoy life.

Here is a story some of you have read before. Read it again and then tell why it would be better for you to stay in school, even if you could stop and get a position to-morrow that would pay you fifty dollars a month.

A Boy Leaves School to Go to Work

"Let us see what happened to a boy who left school early. In 1909 John Williamson was living in one of our large cities. He had made up his mind that he wanted to go to work. John was 14 years old and was in the sixth grade. Because he was 14 years old, he could get an employment certificate. His family did not need the small amount of money which he could earn, but John's father and mother did not realize how important it was for the boy to continue his school work, and so allowed John to drop out of school. He got a position as a messenger boy.

"At first he found the work very interesting. Sometimes he carried messages into mills and factories where fascinating machines were at work making all kinds of interesting products. Perhaps his next trip would take him to a great mail-order house where he would see men and women opening thousands of letters, taking from them the orders, boxing up goods, and shipping the boxes to customers. Very interesting, too, were the public buildings and the people in them, for John lived at the capital of his State. Several times he carried messages to the governor's office.

"Then, too, small as was the amount of money he received for his work every Saturday night, he took great pride in receiving it; and since his father and mother permitted him to keep nearly all of it for his own use, he was able to buy some of the things which he liked. He bought a bicycle and later a motorcycle.

"After a few years John's work became monotonous to him and he discovered that the job he had was not one which brought rapid increases in its rate of pay. After he had been a messenger boy for five years, he was getting very little more than he was in 1909. He thought seriously of looking for another job, but he hesitated to do so, because he now realized that, having failed to complete his school work, he was not fitted for any position which paid well.

"Unfortunately, he was not left to decide the matter for himself. One day the manager of the office called him in and told him that he would not be needed any longer, because the company was taking on some younger boys at the same pay at which John began.

"John now realized how foolish it had been for him to drop out of school and enter what is known as a 'blind-alley' occupation. He had been attracted by the possibility of earning money, but he now saw that in the long run the world is ready to pay more for workers who have training than for those who begin too early and do not plan for their later work (24–27). John discovered too late that employment is something which one must plan very carefully."

Exercises

1. Make a list of all the things that the children have done for public good during past year.
2. Suggest other things that would be worth while.
3. What could this army accomplish if it started a health crusade?

4. Find out all you can about the person for whom your school is named.
5. Find out how long your school has been built.
6. Find out what the people did whose names are mentioned.
7. If we had a new school to name, what would you like to call it?
8. Name the Missions in and around San Antonio.
9. Name other people of the colored race who have become famous and find out why.
10. What poems and songs of Paul L. Dunbar do you know?
11. Who are the people now on the school board?
12. Why has a school board member a responsible position?
13. What kind of persons should your parents elect for this place?
14. Who is the Superintendent of the San Antonio schools?
15. Ask your teacher what a certificate is.
16. For fear your parents will not know about the cost of educating each pupil, practice in school during your language period what you are going to tell them and how you will tell it.
17. Ask your father if he voted for the last school bond.
18. Write to the fifth-grade pupils in one of these new schools and ask them to tell you about their building.
19. Locate the high school nearest you. Who is its principal?
20. Name some private schools in San Antonio.
21. How much does it cost pupils who go to these schools?
22. Get some old person to tell you the kind of school attended and you tell the rest of the children.
23. Name some of the things about the school which you enjoy.
24. See if you can find any other occupations which are "blind-alley" occupations.
25. Name positions for which a high school education will give you good preparation?
26. For what kinds of positions is a college education desirable?
27. What are "corporation schools?" Do they give general education or special training?

MATERIAL FROM SPRINGFIELD, ILLINOIS

The one chapter from the course in "social science" required of freshmen in the high school at Springfield which is reproduced here, is typical, according to the principal, Mr. Kingsbury, of the other chapters. The various chapter topics are listed approximately in the order in which they are treated in the course.

1. The Springfield Water System
2. The City's Streets
3. The City's Lights
4. The City's Transportation System
5. Handling and Protection of Food
6. Protection of Life and Property
7. The Removal of Wastes
8. The Housing Problem
9. City Planning

10. Health and Sanitation
11. Public Recreation
12. Public Education
13. The City's Government
14. The City's Revenues
15. The City's Industries
16. Various Vocations
17. Civic Organizations
18. Americanization of Foreigners and Americans

No. 8. The Housing Problem*

Ward 1. (N. E.) The northeast part of town is, in general, poor, although there are many well-kept places. The houses on Sixth Street are well kept and have good lawns. This street needs a new pavement, but not nearly so much as streets farther east without pavements. The houses on Seventh and Eighth are fairly good, although one girl said that an old house on Seventh was haunted (?). Farther south along Jefferson Street the houses are poor.

On Ninth and Tenth from Enos to N. Grand the houses are well kept with many new ones. Near Reservoir park the houses are as good as could be expected under the conditions. South of Miller on North Ninth are many shacks and farther south the houses are very poor, owing to a large foreign population.

South and east of Tenth Street are many factories and railroads. They need cleaning badly and are "eyesores" to the community. The houses and conditions are miserable. One house by the Wabash railroad was condemned. It had six families living in it, was brown with age, no window panes, about six rooms, and looked as though a good wind would blow it over. Many such cases were mentioned in the themes. Southeast of the fairgrounds the houses are poor. The walks are sometimes washed out and there are no attempts at a pavement. This whole part of town is crowded with foreigners.

Why is it? Why do these conditions prevail? Where is the man who owns these pig-pens? You will certainly find him sitting in a modern home supplied with all modern luxuries and conveniences. We could get after him, but what would his answer be? Probably; "If I should clean up the houses they would be as bad as ever in one week." He is probably right. There is another way. We can educate these people. The great Americanization movement may help to do that. When the people learn their duties as well as their rights they require better homes and keep them better. They may even buy the homes in which they live. Then, and not till then, will the "City Beautiful" be realized.

Summary

6th Street—good.

7th Street—good.

8th Street—good, a few black spots.

9th Street—good north of Enos to North Grand; near Washington and Jefferson Park, poor.

10th Street—good near Reservoir Park; poor south from Reservoir Park.

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* This material is presented substantially as it was submitted. Only gross errors of grammar and punctuation have been corrected for publication.—*Editor.*

11th Street—near Jefferson, fair; north of there, poor. On north and east the conditions are poor.

Ward 2. (Final-North.) Conditions in Springfield, beginning at Washington and Third Streets. Conditions at this place are fairly good. Third street is occupied by the C. & A. railroad. Washington St. is paved; this prevents mud; there are also some very finely kept buildings—one a milling plant; the other is the C. & A. Station. On the next corner north is the Vredenburgh Lumber Company.

The buildings are well kept, but owing to the railroad, heavy smoke prevails most of the day. At Union & Third Sts. the C. & A. angles to the northeast. Houses in this locality are not in as good condition as they could be. This part of town is said to be dirty. That is unsanitary and unhealthy. From this point on north the town is very neatly kept; the lawns are well kept; houses are of a good quality.

At the corner of Fourth & Washington Sts. are hotels: some are well kept and others are not. Fourth Street north of Washington is also a business center; the flats are in very poor condition. There are many business houses along this street. The lawns are kept in good shape, while good buildings are on them to make their appearance very neat. Fourth Street is lighted with cluster lights.

Fifth and Washington is a very respectable part of Springfield. After this comes Broadwell's Drug Store, which has the latest improvements. Fifth Street is kept in good condition as far north as Jefferson Street; the next block is in very poor condition. The north part of Fifth Street is a residence section of Springfield, that part is well taken care of.

Ward 3 (N. W.) For the most part the northwest district is a well kept up district, though a few sections are very poor. In the district close to town there are many apartment buildings crowded together and very badly neglected in the way of lawns.

From about Madison to Dodge there are many negroes and foreigners living in houses crowded close together with no space for good air. These houses are close up to the C. & A. switch yards. Another bad example is along the B. & O. tracks west of Rutledge. This is not conspicuous but if looked into it is found that there the houses have but two or three feet between them. One of them is a double house, making it worse than ever. These houses are unpainted brick ones that I think ought to be torn down, as the bricks are wearing round on all the corners and crumbling together all the time.

From Jefferson to Herndon and from Calhoun to North Ave., there are some poorly kept houses on Rutledge.

The outer part of the Northwest district is a very well kept up district although there are a few miner's houses that look very forlorn. Taken as a whole, this section is very well kept up by the people who live there. There are a few houses being built, but they are scattered around.

Ward 4 (W. and S. W.) Of the western section of town extending from Monroe to Washington and from Third to Amos, Monroe Street seems to be the best kept. The houses from Second to New on both sides of the street seem to be pretty well kept, but some are so close to each other that they are regular fire traps. On the north side of the street from New to Walnut there are some very poor shanties. Little one-story houses are double houses and have no more than two rooms on each side. Many say that the worst on Monroe is from College to Pasfield, and it certainly looks

that way. On Monroe Street from State to Lincoln the back yards of the houses are awful.

Adams Street seems to have fairly good houses, especially are the back yards well kept. The Central Junior High School is in very poor condition and parts were condemned a long time ago but it is still used.

On Washington Street between Pasfield and Third the houses are crowded close together and the same seems true of most on Washington Street.

Behind the new high school building are some houses in very poor condition. The back yards of these houses are very bad.

Some parts in the western district are closely crowded and have unpaved streets. The foreign settlement located on Amos, a little north of Washington, is "Idle Wild."

(Ward 4. S. W.) The southwestern part of Springfield is mostly a residential district. When a town is growing, people generally take a southwestern district to build a home to avoid smoke that is carried by a southwest wind. As a whole we have a very good residential district in the southwest. The cleaner districts are found from Monroe Street south to Laurel and from Second Street West, including Washington Park and Oak Knolls. The houses on Third are about as good as could be expected. Painting them of course does good for the time being. But the smoke from the trains soon darkens them. South on Laurel on First and Second Streets are found poor housing conditions. The houses on the other streets south of Laurel are in very good condition.

Cleanliness and repairs are necessary to make good housing conditions. Many of the houses will appear unsanitary and when an investigation is made, they probably only need painting, guttering or some other repair. We must have repairs to keep houses in good condition.

Among the numerous stores we have in this section, there are a few poor ones, while others are clean and in good repair.

In Washington Park are found some beautiful homes that are well kept. Oak Knolls and Leland are new additions which have many well kept up homes.

We have in this section the Capital, which is kept up by the State. It is very clean. This building is located between Monroe and Charles and Second and Spring. Across the street east from the Capital is a beautiful new building which is the Supreme Court Building.

There are three public school buildings in this southwestern section; they are the Hay-Edwards, Butler, and Lawrence Schools. They are all well kept.

(Ward 5 S. from Third to Fifth, from Monroe.) From Monroe to South Grand Avenue on Third Street the houses are very small, dirty, and need painting and repairing badly. They are set close together, leaving no yard space and consequently the ventilation is bad. This street is not well built up because the C. & A. tracks are on it. From South Grand on, there are no houses or pavement. The alleys between Second and Third are unpaved and very dirty, as are the majority of alleys in Springfield.

The houses on Fourth Street from Monroe to South Grand are large and in good condition. Most of them are correctly roofed, thereby preventing many fires. The yards are large and the ventilation is good. The pavement to South Grand is not very good, but from there out to the city limits it is excellent. One building on Fourth and Capitol is very much of a fire trap in some parts, with its self-running Elevator

and dark, winding stairs. The garages on Fourth from Capitol to Jackson are new and there are many vacant lots. There are street lights from Monroe to Ash. The alley between Third and Fourth is as dirty as that between Second and Third.

On Fifth from Monroe to South Grand the houses are large, well-kept, and the majority are properly roofed. The yards are very large and in some places there are very pretty gardens. The ventilation here is consequently very good, although there are some apartment houses which are not properly ventilated. There is a car line on Fifth Street. The paving is fair to South Grand, but from there on it is very good. The houses from South Grand to the City limits are good, and there are numerous vacant lots. The alley between Fourth and Fifth is paved from Canedy to Edwards, but from there on it is not paved; all of it is dirty.

Ward 6 (E. and S. E.) The conditions in the eastern part of Springfield vary according to the weather, because after the spring rains there is mud even on the paved streets, and in the summer time it is most generally very dusty.

If one goes down Washington Street, from Fifth to Nineteenth Streets, he would see that the paving is fair, and the houses are small but pretty good.

In going down Adams Street, you would see that the paving from Tenth to Nineteenth Streets is very bad, on account of the numerous coal wagons which come from the Capitol Mine on Nineteenth Street. The wagons make deep holes in the street, and when it rains, these are filled with water and mud. In the summer time this street is very dusty on account of the coal dust from the wagons. All the cross streets are muddy on the other side of Tenth Street, except Eleventh and Eighteenth Streets. The houses along this street are small, but most of them are very well kept up and clean.

In regard to Monroe Street, this street is kept up very well; the paving from Fifth to Fifteenth Streets is good brick paving. The houses along Monroe Street are mostly two-story structures and most all are kept very neat and clean. The lawns are well kept, as well as the back yards. At Fifteenth Street there is a very beautiful house, which shuts off Monroe Street. At Seventeenth Monroe Street starts again, and from there to Nineteenth Street there is no paving and houses are poor.

In going down Capitol Ave., which leads from the east side of the State House, there are many business houses and at Sixth Street there is the Leland Hotel and Office Bldg. From there to Tenth Street the buildings are fair. From Tenth to Nineteenth Streets the houses are good, but the street is very, very bad especially until you get to Fifteenth where the street car from Monroe Street turns; the street is good from there to Nineteenth Street.

The district south of Monroe to South Grand Ave., west of Ninth, is one of the best in the city. The yards are well kept; the streets have good paving, and the houses are well lighted. Further south of this district about fifty per cent of the houses are in good condition. In this location is Isles Park, which adds to the appearance of the city. Across the street from this little park are the car barns. With its lines of old cars and unclean buildings it detracts much from the good condition. Another addition is being built and with the new houses, newly paved streets and well-kept lawns, it adds much to the beautification of the city.

The houses in the district east of Ninth and south of Monroe are very poor. In this part are the Wabash Railroad and shops. The trains fill the air with smoke, and for

this reason the houses are dirty and give the appearance of a smoky city. There is also the Lincoln School, which is modern and has up-to-date architecture; but the houses neighboring are not on the level with it, therefore it looks unbalanced.

South of South Grand Avenue is positively the worst part of town. In this district one will find unkept streets, unclean houses, bootlegging joints and other disagreeable things in life.

In Harvard Park, which is south of Isles, the houses are in keeping with the up-to-date church and school. A few factories and a mine detract much from the appearance. Some of the streets are unpaved, while some have new paving and are kept clean.

From Monroe to the City limits and from Fifteenth to the City limits are houses in very poor condition. Most of the people are foreigners.

Ward 7 (Business). The center of town is practically all taken up by business buildings. The apartments, on Adams near Third, are very crowded and dirty and the meat-packing houses are rather unsanitary. In this district is one bank, one newspaper office, and several auto repair shops.

Fourth Street, although well paved, is usually dirty.

On Fifth are a good many of the best stores in the city, two 'movie' houses and one drug store. East of Fifth, between Adams and Washington, is the Court House, which has a large piece of ground surrounding it, but this ground is not allowed to be used as a park. However, it rather breaks the monotony.

Between Adams and Washington, on Fourth, is a very bad looking block; on the east side is a very dirty livery stable, and on the west are many small dirty stores which present a bad appearance.

In this district are several lunch rooms, the Illinois Hotel and several cheaper hotels.

MATERIAL FROM LAWRENCE, MASSACHUSETTS

This material upon Czechoslovakia and Jugoslavia is part of a series of topics used in a history course in the eighth grade of the Oliver School. Similar sections deal with Russia, Poland and other countries. This work has been compiled by a number of persons who co-operated under the general group name: "The Lawrence Plan for Education in Citizenship." It is the product of the idea of *Mr. John J. Mahoney*, and is reproduced here with all rights reserved to the authors.

In explaining the use of what follows the authors say:

"This material should be used largely as a background for the teacher. It is for this purpose that the notes have been made so full. An effort has been made to give pertinent ideas and expressions directly from the references. Page references for limited amounts of materials are given so that the teacher may use them in assignments and may have some notion of what the child should cull from reading. It is hoped that the spirit of these new countries will carry over, that the teacher will present it in her own way and will leave the children eager to have justice done.

"The organization and various problems here given should be regarded only as suggestions. The teacher who presents this work best will in all probability find that her class will lead her to discuss these or similar problems in quite a different order. Even so, the ideas and reference materials will be useful.

Czechoslovakia

Summary of the Work on Czechoslovakia

1. Are there other countries besides Poland that have obtained freedom because of the Great War?
2. Where do the Czechoslovaks live and how did they come to be there?
    a. Map study.
    b. Size, location, and importance.
    c. Legend shows them to be an old people and of Slavic race.
3. What kind of a country was this Bohemia of early times?
    a. A free country with a very high form of culture.
4. How did the Czechoslovaks come to be under Austrian rule and to dislike it so?
    a. Bohemia made an alliance with Austria to withstand the Turks, as France made with England to withstand the Germans. Austria later claimed that she had the right to rule Bohemia.
    b. Oppression.
5. Have the Czechoslovaks used the Great War as a chance to gain their liberty?
    a. What have the people done?
        (1) The whole nation?
        (2) The soldiers?
        (3) People at home?
    b. What have their leaders done?
        (1) National Council.
        (2) Masaryk.
    (c) What has been accomplished?
        (1) Three armies.
        (2) Declaration of independence.
        (3) Recognition by Allies.
        (4) Recongition by United States.
6. Why is it important to us and to the whole world to have the Czechoslovaks free?
    a. Just
    b. Barrier against Germany.
    c. Industrial state.

Note: Let this work be for appreciation, not for facts.

Detailed Work on Czechoslovakia

1. Point of contact: What other nations besides Poland are getting their freedom because of the Great War? (Czechoslovakia and Jugoslavia.)

2. Teacher's guiding question: Where do these Czecho-Slovaks (Czechs and Slovaks) live and how did they come to be there?

Contributions from the children: (a) Map study—Bohemia and Moravia are north of Austria and Slovakia is just east of Moravia and north of Hungary. *World's Work*, Oct. 1918, 629.

Note: It is not particularly important that the children learn the names Moravia and Slovakia, but it is important to carry this location over to a map of old Europe and to note that they lie directly between the German Empire and Austro-Hungarian Empire of former times.

(b) Size, location, importance; *Outlook*, August 28, 1918, p. 644. (The Czechoslovak Nation) and *Clipping Book* IIIc, p. 1.

(c) Legend of the coming of the Czechs as well as the Russians and Poles. *Little Polish Cousin*, pp. 5–9.

Note: The idea to leave from this story is that these three peoples are of the same race (Slovaks too) and that they are very old peoples in Europe.

3. Teacher's guiding question: What kind of a country was this Bohemia of early days?

Contributions from the children: Bohemia's culture is old. She had the leading university of Europe in early times. Hus translated the Bible into the Bohemian language one hundred years before Luther performed that service for Western Europe. This shows that the Bohemian language is older than German. Bohemia was praccally the first country to fight for freedom of mind (freedom to have ideas) and freedom of the individual (personal liberty). *Bruno's Bohemia*, March, 1918, pp. 1 and 2.

Bohemian music is very old. *Clipping Book*, IIIc, p. 4

The teacher may add some appreciation of the culture of the Czecho-Slovaks gathered from "Czechoslavakia's Rich Heritage of Culture" in *Clipping Book* for teachers.

4. Teacher's guiding question: How did the Czecho-Slovaks come to be under Austrian rule and to dislike it so?

Contributions from the children: (a) More than three centuries ago Bohemia allied herself with Austria for protection against the Turks (about the time that Sobieski helped save Vienna from the Turks). Gradually Austria changed this alliance with free Bohemia into absolute rule. The Bohemians have been so oppressed during these last centuries that it seems strange that any national spirit is left. In spite of this Bohemia has to-day a generation of people filled with love for her and willing to make any sacrifice for her independence. When the leaders of Bohemia after years of oppression began to speak in public and to edit papers in Bohemia, persecutions were visited upon them without stint. However, as some were killed or imprisoned, others took their places and the present spirit which gives Bohemia a distinct nationality is the result of these brave leaders. (*Bruno's Bohemia*, March, 1918, pp. 1 and 2. Emotional article making a strong appeal for Bohemia.

(b) Hungary, Austria and Bohemia formed a free federation to meet the advancing Turks. Later the king of Austria claimed that he had an hereditary right to rule Bohemia, though he knew that the Bohemians had chosen him and had the same right to choose some one else. The Czechs fought many battles for their freedom, but at the Battle of White Mt., 1620 (the year the Pilgrims came to America for religious freedom, the Austrian king crushed Bohemian freedom. He beheaded 27 Bohemian nobles and exiled 659 others. He took much land in Bohemia away from Bohemians

and gave it to Austrians. At the beginning of this war (Austria knew that the Bohemians did not approve of the war), the Austrian government suppressed the independent newspapers in Bohemia (lack of free press), imprisoned thousands of Czecho-Slovaks, sentenced many more to death (Masaryk) (lack of personal liberty and liberty of speech), and confiscated property. *Outlook*, Aug. 28, 1918, p. 644.

Battle of White Mt., Austrian oppression of the Czechs, Hungarian (Magyar) oppression of the Slovaks (cannot use their own language in their schools), etc., *Survey*, Nov. 1918, p. 118.

5. (Teacher's guiding question.) How have the Czecho-Slovaks used this war as a chance to gain independence?

(a) What have the people done?

(Contributions from the children.)

(1) The whole nation (Czecho-Slovak) went against Austria-Hungary and Germany on the side of the Allies. The Czecho-Slovak National Council declared the Hapsburgs deposed from the throne of Bohemia Nov. 14, 1915. The Czecho-Slovaks feel that since they invited the Austrian king to their throne centuries ago they have the right to take it back. *Nation*, Sat. Oct. 5, 1918, p. 4.

(2) The soldiers vowed that they would not fight against the Russians nor the Serbs. Many were arrested and put to death. *World's Work*, Oct. 1918, p. 630. Regiments of Czechs refused to entrain for the Russian front. Machine guns were turned on them. (*Same*, p. 631.) Later they went quietly to the front and then deserted, whole regiments at a time, to the Russian or Serbian side; many were killed while deserting. Then the Germans took command of the Austrian army, broke up the Czech regiments, and scattered the men among the Austrian and Hungarian soldiers. Then individual Czechs deserted. The Austrians tried to terrorize these people. Many were killed., (p. 632.)

The soldiers who deserted in these various ways formed the three Czecho-Slovak armies, one in France, one in Italy and the much talked of one in Russia. Appreciation of the service rendered the Czecho-Slovaks by these soldiers is found in "Czecho-Slovak Liberation," *Clipping Book*, IIId, p. 3.

Note: *The Story of the Czecho-Slovak Army in Russia* is a thrilling tale recorded in many places and very valuable in that it gives an appreciation of the Czecho-Slovaks. It shows them as intelligent men, capable of self-direction, law-abiding, and courageous. The Bolsheviki have not been able to influence them. They crossed the Serbian plain (400 miles) with practically no guns and ammunition. There is not a soldier in that army who cannot read and write. References: *Everybody's*, Feb. 1919, pp. 42, and 93, also in *Clipping Book*, IIIc, p. 2.

Masaryk told them at Keif that there was one place where they could still fight the Germans, France. So they started east across Siberia. Masaryk was going to try to have ships for them at Vladivostok to take them to France.

References: *Nation*, Sat. Oct. 1918, p. 5; *World's Work*, pp. 625–628, also p. 633, 1918; *Literary Digest*, Sept. 7, 1918, or *Clipping Book*, IIId, pp. 4–6; *Clipping Book*, III.

(3) The people at home refused to subscribe to the war loans urged by Austria and to sell their surplus food to Austria at any price. More than 30,000 put to death

(women too). Not a leader left. No free press or speech. *World's Work*, Oct. 1918, p. 630.

(b) What have their leaders done?

(1) Many Bohemian leaders have been imprisoned, while some escaped. These later formed the Czechoslovak National Council with offices in London, Paris, Washington, Rome, Moscow and Chicago. They began collecting money, raising troops, and spreading the idea that the oppressed Czechoslovaks deserved and desired a free and united country. *World's Work*, Oct. 1918, p. 632.

(2) Masaryk, the greatest among these leaders, was the real leader of these early movements, and when a government was formed he was chosen president. Masaryk as a popular professor in Prague University had worked for years to keep the hope of Bohemian freedom and liberty before the Bohemians. "What is there in Bohemia which makes it worthy to live again as a nation among nations?" was the question he asked again and again. His idea was that, since Bohemia was once a nation and since her spirit had not died through these long years of oppression, there must be something worth while that she was to give the world. That something to Masaryk's mind is that Bohemia has stood for Democracy against Autocracy. Early in the war, before the Allies had promised Bohemia anything and when it was very uncertain that the Allies could even hold their own against the Central powers, Masaryk declared that Bohemia was on the side of the Allies and liberty. *Everybody's*, Nov. 14, 1915; Feb. 1919, p. 94. (This is in the *Clipping Book*). Masaryk tells in a most charming and simple fashion the story of his own life till the time he became a professor in Prague University in *World's Work*, Oct. 1918, p. 634–635. In the above reference, "Condemned to Death," p. 636, gives a good statement of his work since the war began.

c. What has been accomplished?

(1) During the latter part of the war they maintained three armies, one in France, one in Russia, and another in Italy.

(2) Declaration of independence signed at Philadelphia, Independence Hall, Oct. 26, 1918. This may be the most appealing event of all to the class. Much should be made of it.

(3) The Allies saw that the Czechoslovaks could give help as well as ask for help. France, Italy and Great Britain recognized them though they had not a foot of territory. They regarded the Czechoslovaks as an allied nation and their armies as an allied army. *World's Work*, Oct. 1918, p. 634. *Literary Digest*, Aug. 31, 1918, p. 21. *Clipping Book*, IIId, p. 2.

(4) The Czechoslovaks especially value their recognition by the United States because they consider this great American republic the mother of modern democracy. *Nation*, Sat. Oct. 5, 1918, p. 6. A soldier in the Czechoslovak army had a tin box with earth in it. "This soil," he said, "is from Mount Vernon. I am taking it to sprinkle in Bohemia." *Survey*, Nov. 2, 1918, p. 120.

6. Teacher's guiding question: Why is it important to us and to the whole world to have the Czechoslovaks free?

(a) It is just.

(b) The Czechoslovak state will be an effective barrier against Germany; it will form the westernmost part of the wedge against German expansion. Bismark said "Whoever is master of Bohemia is master of Europe." *Nation*, Sat. Oct. 5, 1918, p. 5.

See "Germany's Need of Austria-Hungary," *World's Work*, Oct. 1918, pp. 636, 638, 639, and 644. The Czechoslovaks, the Jugoslavs, and the Poles, as free nations, would put an end to Germany's dream of a large kingdom lying through central Europe and on down into Asia.

(c) "A Steel Town in Moravia," *Clipping Book*, IIIc, p. 3, gives some idea of the industrial importance of Czechoslovakia. "This country is undoubtedly going to do a big business with the United States."

Note: A most interesting and inspiring article for teachers who care to read further is "Men of Bohemia," *Harpers Mag.*, Jan. 1919, pp. 247–255. "You can only love a country little and persecuted as we love Bohemia. It is not an emotion of a day but one of centuries—centuries of sorrow."

Jugoslavia

Summary of the Work on Jugoslavia

1. Is there still another country which is gaining its independence because of the Great War?
2. Who are these Jugoslavs?
    a. Why are they called Jugoslavs?
    b. Locate Jugoslavia on the map.
    c. Since there never has been a Jugoslav nation, how old a people are the Jugoslavs in Europe?
3. Can we show that these people deserve their liberty and a united nation?
    a. Do those under Austrian rule deserve liberty?
        (1) When and how did these Croats and other of the Slavs come under Austrian rule?
        (2) How did Austria treat these Slavs under her rule as her power increased over them?
    b. How does the history of the Serbians show that they are a liberty-loving people?
    c. What can we find about the spirit of Montenegro?
    d. Would it be easy for all these people to unite?
4. What difference does it make to us and to the world whether these Jugoslavs have a free and united nation?
5. What have the Jugoslavs done toward obtaining their liberty and union?
    a. Committee of London.
    b. Our attitude.
6. What will help Jugoslavia maintain her independence?

Detailed Work on Jugoslavia

1. Point of contact: Is there still another country which is gaining its independence because of the Great War?

2. Teacher's guiding question: Who are these Jugoslavs?

a. Why are they called Jugoslavs?

Contributions from the children: "Jugoslav" is the Serbian for the "South Slav." (We would expect them to be Slavs living in the South. There are three groups of these Slavs (Serbians, Croats, and Slovenes); the term Jugoslav includes them all.

These three groups speak practically the same language. *Literary Digest*, Feb. 1, 1919, p. 39.

b. Locate Jogoslavia on the map.

Contributions from children: In the western half of the Balkan Peninsula with the Danube and Drave rivers on the north, and Greece and Albania on the South. Area will be 100,000 sq. mi. (almost one-half the size of continental France) and population about 12,000,000 (about the same as that of continental Italy). *World's Work*, Dec. 1918, p. 155.

Jugoslavia will contain Servia, Montenegro, Bosnia, Croatia, and many other small territories. All of these except Servia and Montenegro have been under the ru e of Austria-Hungary. *Literary Digest*, Aug. 31, 1918, p. 20. See also maps and clippings in clipping books.

c. Since there never has been a Jugoslav nation, how old a people are the Jugoslavs in Europe?

Contributions from children: These Slavs came into Europe in the early days with many other barbarians from the Asiatic plains. This was at the time that Greece and Rome were losing their power (sixth century A.D.). *World's Work*, Dec. 1918, pp. 154–155. This makes them almost as old in the Balkan Peninsula as the Germans in Germany or the Franks in France, or the Anglo-Saxons in England.

3. Teacher's guiding question: Can we show that these people deserve their liberty and a united nation?

a. Do those under Austrian rule deserve liberty?

(1) When and how did these Croats and other of the Slavs come under Austrian rule?

Contributions from children: In the sixteenth century (1527) the Croats chose the Austrian Emperor as their king. They hoped thus to get protection from the Turks who had already conquered Servia (Serbia), Bosnia and part of Croatia. The Austrians gradually changed this free alliance into absolute rule over these Slavs. *Literary Digest*, Feb. 1, 1919, p. 40. So these Slavs, like the Czechs in the north, came of their own free will to form a union with Austria to get rid of the Turks. Austria betrayed them as she did the Czechs.

(2) How did Austria treat these Slavs under her rule as her power increased over them? *Our Slavic Fellow Citizens*, Ch. V, p. 37.

Contribution from children: Part of them were turned over to Hungary to rule. Hungary imposed very heavy taxes on them—more than half of all the taxes were collected from these people. She forbade them to use their own language and tried in every way to make them Magyar (Hungarian). Austria treated those under her rule very little better. See clipping books.

b. How does the history of the Serbians show that they are a liberty-loving people?

Contribution from children: Serbia has past glories to cheer the Serbian heart. Her greatest ruler was Stephan. At this time Serbia was a large country. Bravely they fought at Kassova (1389) under Stephan's son, but the Turks overcame them and robbed them of their liberty. Serbian freedom was lost. The Serbs had to pay one tenth of all their labor to the Turks. Years later, under Kara George, the Serbs began to win back their freedom from the Turks. *Little Serbian Cousins*, "A Glimpse into

Our History," pp. 64–67. "The memory of this past history has been kept alive in the hearts of its people through stirring folk songs and ballads. The hope has never died that some day their beloved country would regain its past glories." *Little Serbians Cousins*, pp. V and VI.

c. What can we find about the spirit of Montenegro?

(Note—In a study of liberty much may well be made of this little country.)

Contributions from children: "Montenegro is a dauntless champion of liberty that, with freedom's clarion-cry ever on her lips, has for hundreds of years stood facing awful odds, fearless of men, fearing God alone." They have faced the most powerful armies of the world. *Peeps at Many Lands—Montenegro*, pp. 1–2.

Poverty is no disgrace in Montenegro, since, from the king down, all are poor. *Peeps at Many Lands*, pp. 6–7.

Chapter II, "The Making of a Nation," pp. 8–17 in *Peeps at Many Lands* is a stirring tale of continued stands (500 years) made by these brave Montenegrins against the hosts of cruel Turks. A high plain (Cetihje) in the heart of Montenegro's mountains is the only spot in southeastern Europe which has not been overrun by the Turks. Many times when it seemed that the Montenegrins could hold out no longer the Turks would give an offer of peace under Turkish suzerainty. The Turks made these offers attractive and yet the Montenegrins always refused, no matter if their cause did seem hopeless. This is the answer given on one such occasion, "If die we must, then let us die for freedom; freedom for our faith, freedom for our homes, freedom for our children's children."

d. Would it be easy for all these people to unite?

Contribution from Children: They, all these Southern Slavs, speak practically the same language; so it is natural that they should unite. They have asked that they be permitted to unite and form one nation. The Allies have recognized their right to form such a nation.

4. Teacher's guiding question: What difference does it make to us and the world whether these Jugoslavs have a free and united nation?

Contribution from children: We are interested in all peoples having free nations. Since the war began, the oppressed Jugoslavs of the Austrian Empire have been holding out to us Allies suppliant hands begging us to assist them to become free and join their Serbian brothers in making a free nation, Jugoslavia. *Literary Digest*, Aug. 31, 1918, p. 20.

These countries lie in the path of the great Berlin-Bagdad Railroad. A strong independent nation made up of these peoples would greatly aid Czechoslovakia in destroying Germany's dream of "Mittel Europa." *World's Work*, Dec. 1918, p. 154, also last paragraph, p. 160.

To leave these people dissatisfied would lead to another European war.

5. Teacher's guiding question: What have the Jugoslavs done toward obtaining their liberty and union.

(a) Committee of London.

Contribution from children: At the beginning of the Great War representatives of the various Jugoslavic tribes met in London and began to organize their peoples. They declared to the nations of the world that they were one people, not three or more. They also declared that the Jugoslavs under the Austro-Hungarian yoke deserved and desired freedom; that they wished to join with their free brothers in Serbia and Montenegro in one united nation, Jugoslavia. In this nation every one shall have the right to vote. *World's Work*, Dec. 1918, pp. 159–160.

(b) What is the attitude of our nation toward Jugoslavia?

Contribution from children: May 29, 1918, we expressed our sympathy for these people. June 28, 1918, we declared that all Slavs should be free from Austrian and German rule. February 7, 1919, we recognized Jugoslavia as a nation. *Current History Magazine*, March, 1919, p. 492.

6. Teacher's guiding question: What will help Jugoslavia maintain her independence?

Contribution from children: The Montenegrins and Serbians have had experience in self-government.

Jugoslavia is rich in natural resources, agricultural products, wood, iron, copper, aluminum, and coal. *Literary Digest*, Feb. 1, 1919, p. 49, first column.

A League of Nations determined to protect weaker nations.

APPENDIX

REPORT OF THE COMMITTEE ON NEW MATERIALS OF INSTRUCTION OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION. PRESENTED TO THE SOCIETY AT ITS MEETING, 1919

The Committee did not attempt to push its program until late last autumn. During the spring and summer school people were so fully occupied by war duties that it did not seem wise to launch any new work. By December the circular letter asking members of the Society for information was ready and since that time the Committee has succeeded in making some headway with its problem.

It will be remembered that the Committee was appointed at the Atlantic City meeting after a brief discussion of the need of a centralizing agency to bring together the unpublished or inaccessible materials of instruction which are scattered throughout the school systems of the country. There are in a number of cities books on local history and local industries which are excellent examples of the type of reading matter which pupils enjoy and from which they derive the greatest benefit. There are outlines of courses of study which are full of new and stimulating suggestions. There are classroom devices which progressive superintendents have given to their teachers, often on mimeographed sheets—all of which would help teachers in every school system if only they could be made generally available. The Committee was instructed to bring this material together so far as possible and to devise methods of distributing it.

The program of activities outlined for the Committee included certain further steps. Not only is new material to be discovered and distributed, but also its use is to be followed by tests and investigations designed to determine what materials are most useful. It is hoped that through coöperative studies on a large scale there is to be reached as the final product of the this sifting process a body of highly selected and carefully standardized material.

The Committee has attempted in the short time during which it has been active to collect some examples of the type of material with which it intends to deal. These examples are not to be mistaken for the final report of the Committee nor for definitions of the range of the Committee's conception of the limits of such endeavor as it has launched.

In order to get material promptly the Committee asked members of the Society to send in statements about new lines of work being undertaken in Grades seven to nine. The inquiry might have dealt with the Americanization movement which has brought together much valuable material. It might have dealt with such reforms in the lower grades as the reorganization of arithmetic or the reorganization of reading. The inquiry began with Grades seven to nine because there is here an especially vigorous movement of reorganization.

From this center it is the plan of the Committee to extend its operations in any direction in which it is led by the material. In fact, it will aim to stimulate the creation of material. It is not the purpose of the Committee to prepare a general outline in advance of the appearance of instructional material. It is not the plan to make a syllabus or to outline general principles. It is rather the plan of this Committee to find material in use, provide for its distribution, bring together coöperative criticisms from teachers who have used the material and thus by the inductive method to arrive at reconstruction of the materials of instruction.

The Committee has had the assistance of members of this Society. In several cases long lists of persons have been sent in who are not members of the Society and would therefore not be reached directly by the first letter. These persons are being addressed in terms similar to those used in writing to members of the Society, and the Committee can report progress in widening its circle of sources of information.

From the material which has come into the Committee's hands during the last month several major conclusions can be drawn, and these are presented to the Society as justification for the request that this statement be accepted as a preliminary report, and that the Committee be continued for further work of the same type and related types during the year to come.

First, it is evident that a good deal of experimenting is going on in the elementary schools, especially in the grades canvassed in this preliminary inquiry. New types of arithmetic are being tried. The reading is in many schools being modified with a view to cultivating silent reading rather than the traditional oral reading. There is a decided renewal of the effort to introduce nature study. Courses in handwork and domestic science are becoming common. As contrasted with the complaisance of a decade ago, there is a striking unrest in these upper grades. This unrest is a symptom, we believe, of growth.

The second, very general conclusion which comes out of the study of our materials is that the changes which are being introduced are in the direction of a rapid enrichment of the curriculum. There is a wider range of courses than formerly. In many of the outlineswhich have come in there is explicit provision for different types of pupils. The upper grades are being opened to subjects formerly thought of as exclusively belonging to the high school, such as Latin and algebra and higher stages of English. Some of these changes are for the purpose of providing early elective opportunities for those pupils who are going on to the high schools. Many of the changes are, however, evidently intended to benefit those who are not going on.

The third conclusion to which the material has led the Committee can be expressed most clearly in the form of a criticism of many of the courses which are being devised. For example, some of the courses in English which are being tried are absolutely unrelated to the courses in history or science. It is no novel comment to say that correlation among school subjects is not as fully cultivated as it might or should be. The criticism of these new courses extends somewhat beyond the earlier criticism which was launched against the uncorrelated courses of the ordinary curriculum. New materials of instruction are being brought in rapidly. A part of the difficulty which teachers experience in dealing with this new material is the difficulty of attaching it to the old curriculum. The new materials are from their nature often very stimulating to the attention, but they seem to stand apart from the ordinary courses. There is a dangerous scattering and disintegrating of the work of the school because of the novelty and aggressiveness of the new courses. The situation is one which threatens disorganization, just because it offers such wide opportunity.

This difficulty can be illustrated by reference to the internal organization of particular courses and also by reference to the competition between courses. For example, in arithmetic the introduction of new materials tends to break up the course into two widely separated lines of study. The practical applications of arithmetic to economic life are developing a commercial arithmetic while the introduction of the elements of algebra into the grades is pulling in the direction of a purely abstract science. The abundance of new material is thus disrupting the subject of arithmetic.

Externally the disrupting influence of new courses is showing itself in the form of competition between subjects. The handwork courses and the academic subjects do not correlate readily and as soon as they tend away from each other science and history tend to follow now the one major interest, now the other. History is to be industrial history on the one side or high-school history of the conventional type on the other. English is business English or academic English.

The result of all this is a much exaggerated difficulty of correlation of subjects. While the ordinary elementary curriculum exhibited some centrifugal tendencies the new curriculum is in danger of falling apart because of its lack of coherence.

This difficulty compels the Committee to define as one of its large problems the discovery of principles of integration. Courses and new materials that are foreign to one another must be brought together in some general scheme of organization. There must be a critical survey of the whole broad array of subjects with a view to discovering if possible unifying principles which will overcome the tendencies toward disintegration.

It is to be emphasized that the Committee aims to find the possibility of correlation within the material collected. No imposition of external correlations will organize the courses of study. The courses must be allowed to evolve and must then by coöperative use and criticism be refined and correlated. The Committee will aim to become the center for empirical coördination. It will not prepare a program in anticipation, but will follow the lead of the material.

There is in the material which has been submitted a very strong suggestion that one center of integration may be found in the new work in the social sciences which is being offered to pupils in Grades

seven to nine. Pupils 12 to 15 years of age are just at the point where they are beginning to look out on the social world about them with the interest that comes from a desire to find their places in the social scheme. They are eager to know something about the institutions around them and to have a part in the operations of these institutions. The study of society is in some quarters being suggested as a central theme for geography and arithmetic and history. It is not unlikely that the need of a fuller emphasis on social studies will result from a study of school programs other than those which have been reported.

In order to get results along the lines indicated the Committee needs the coöperation of many workers. The faculties of normal schools could contribute much in the way of stimulating outlines and suggestions as to sources of materials. In their work with practice teachers they have frequent occasion to refer to such materials. Building principals ought to contribute very largely to this movement. It is, we believe, highly desirable that the principal cultivate a broad intellectual interest in the curriculum. Too often the enthusiasm for intellectual things grows dim in the experience of the principal because of his remoteness from anything except routine administrative tasks. The looking up of new materials for the teachers of a building would be a stimulating line of work and ought to be taken up by many principals.

There is another kind of coöperation which the Committee believes it may be possible to promote. At the present time school systems are expending nearly all the energy which they have in giving to pupils the materials of instruction which are at hand. Little or no energy is purchased by public funds and devoted directly to the creation o new materials of instruction. Thus teachers' salaries are paid for giving out material, very little is chargeable to the salary account for the development of new material. The Committee hopes gradually to persuade boards of education of the wisdom of giving some strong teacher half time from teaching duties provided the time granted is spent in producing new materials with which to enrich the curriculum. This plan can be tried most readily in experimental schools. At first it may take the form in public schools of an appointment of some supervisory officer to carry on the work. The Committee believes that its function is not merely to discover the systems where new

material is now in use, there are also large possibilities of stimulating the creation of material where it does not now exist. For the future development of school plans it is more important to evolve the methods of producing new materials than it is merely to discover materials now at hand.

By way of providing for the execution of these plans the Committee asks the Society to continue it for the coming year. It asks that the Executive Committee be authorized to appropriate from the treasury of the Society funds for printing and postage. It asks that a part of the program of next year be devoted to the consideration in detail of such results as may be secured by carrying out the program thus authorized.

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CONSTITUTION OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

ARTICLE I

Name.—The name of this Society shall be "National Society for the Study of Education."

ARTICLE II

Object.—Its purposes are to carry on the investigation and to promote the discussion of educational problems.

ARTICLE III

Membership.—SECTION 1. There shall be three classes of members—active, associate, and honorary.

SEC. 2. Any person who is desirious of promoting the purposes of this Society is eligible to active membership and shall become a member on approval of the Executive Committee.

SEC. 3. Active members shall be entitled to hold office, to vote, and to participate in discussion.

SEC. 4. Associate members shall receive the publications of the Society, and may attend its meetings, but shall not be entitled to hold office, or to vote, or to take part in the discussion.

SEC. 5. Honorary members shall be entitled to all the privileges of active members, with the exception of voting and holding office, and shall be exempt from the payment of dues.

A person may be elected to honorary membership by vote of the Society on nomination by the Executive Committee.

SEC. 6. The names of the active and honorary members shall be printed in the *Yearbook.*

SEC. 7. The annual dues for active members shall be $2.00 and for associate members $1.00. The election fee for active and for associate members shall be $1.00.

ARTICLE IV

Officers and Committees.—SECTION 1. The officers of this Society shall be a president, a vice-president, a secretary-treasurer, an executive committee, and a board of trustees.

SEC. 2. The Executive Committee shall consist of the president and four other members of the Society.

SEC. 3. The president and vice-president shall serve for a term of one year, the secretary-treasurer for a term of three years. The other members of the Executive Committee shall serve for four years, one to be elected by the Society each year.

SEC. 4. The Executive Committee shall have general charge of the work of the Society, shall appoint the secretary-treasurer, and may, at its discretion, appoint an editor of the *Yearbook.*

SEC. 5. A board of trustees consisting of three members shall be elected by the Society for a term of three years, one to be elected each year.

The Board of Trustees shall be the custodian of the property of the Society, shall have power to make contracts, and shall audit all accounts of the Society, and make an annual financial report.

SEC. 6. The method of electing officers shall be determined by the Society.

ARTICLE V

Publications.—The Society shall publish *The Yearbook of the National Society for the Study of Education* and such supplements as the Executive Committee may provide for.

ARTICLE VI

Meetings.—The Society shall hold its annual meetings at the time and place of the Department of Superintendence of the National Education Association. Other meetings may be held when authorized by the Society or by the Executive Committee.

ARTICLE VII

Amendments.—This constitution may be amended at any annual meeting by a vote of two-thirds of voting members present.

MINUTES OF THE MEETING
of the
NATIONAL SOCIETY FOR THE STUDY OF EDUCATION AT CHICAGO, ILLINOIS

MONDAY EVENING, FEBRUARY 24TH, 1919

The annual meeting of the Society was held in the Ballroom of the LaSalle Hotel. There was an attendance of some 1,000 persons, so that the arrangements which had been made to reserve the better seats for members of the Society were much appreciated. It was unfortunate that the President, Professor George D. Strayer, was prevented by illness from presiding. His place was ably filled, however, by the Vice-President, Superintendent John W. Withers, of St. Louis, Mo. The program was carried out as follows:

Development of Teachers on Pupil Level.
H. L. MILLER, Assistant Professor of Education and Principal of the Wisconsin High School, University of Wisconsin, Madison, Wisconsin.

Preparation of High-School Teachers in Degree-Granting Normal Schools.
HERBERT, J. LULL, Director of Teacher Training, Kansas State Normal School, Emporia, Kansas.

How Far Can Teaching Be Taught.
RAYMOND KENT, Professor of Education, University of Kansas and Superintendent of Public Schools, Lawrence, Kansas.

Observation in Connection With Practice Teaching for Secondary Teachers.
FISKE ALLEN, Supervisor, Elementary School, Eastern State Normal School, Charleston, Illinois.

The Administration Of Directed Teaching.
W. W. CHARTERS, Dean of the College of Education, University of Illinois, Urbana, Illinois.

The Work of the Committee on New Materials of Instruction.
CHARLES H. JUDD, Chairman of the Committee.

Discussion:

STEPHEN S. COLVIN, Professor of Educational Psychology, Brown University, and Inspector of High Schools for the State of Rhode Island.

DAVID FELMLEY, President, Illinois State Normal University, Normal, Illinois.

At the business meeting held directly after these addresses, the Secretary presided, and the following items of business were disposed of:

(1) On motion it was *voted:* That the Constitution of the Society, Article III, Section 7, be amended by adding: "The election fee for active and for associate members shall be one dollar."

(2) The Secretary explained that to avoid the losses that have hitherto been suffered by the mailing of *Yearbooks* to persons who fail subsequently to pay their dues, he had not sent the 1918 *Yearbooks* to associate members until their dues had been paid. He raised the question of the desirability of extending this practice to apply in the future to active members as well. On motion of Professor Judd it was then *voted:* "That statements of dues are to be rendered in October for the following calendar year. Any member so notified whose dues remain unpaid on January 1st thereby loses his membership and can be reinstated only by paying the election fee of one dollar required of new members. Consequently the *Yearbooks*, ready in February, will be mailed only to those whose dues have been paid." While this motion was under debate Professor Charters requested the Secretary to present at the 1920 Business Meeting a statement concerning the advisability of doing away with associate membership.

(3) The Secretary explained that he had, on his own initiative, taken the responsibility of remitting the annual dues of members known to have been engaged in military service, following the practice of various scientific and educational organizations. On motion it was *voted:* That this action of the Secretary be endorsed.

(4) The report of the Society's Committee on New Materials of Instruction, as already presented by the Chairman, Professor Judd, was formally accepted, and the Committee was continued.

(5) On recommendation of the Executive Committee, it was unanimously *voted:* That John W. Cook, President of the Northern Illinois State Normal School, be elected to honorary membership in the Society. This action was taken on account of President

Cook's retirement from active service in the teaching profession and on account of his effective participation in the work of the Society as an active member of long standing.

(6) On nomination by the Executive Committee, the following persons were elected to office for the ensuing year;

For President

JOSEPH C. BROWN

President, State Normal School, St. Cloud, Minnesota

For Vice-President

WILLIAM S. GRAY

Dean, College of Education, University of Chicago

For member of the Executive Committee (to succeed Dwight B. Waldo)

PAUL W. HORN

Superintendent of Schools, Houston, Texas

For member of the Board of Trustees (to succeed Edward C. Elliott)

W. W. KEMP

Professor of Educational Administration, University of California, Berkeley, California

(7) It was announced that the Report of the Secretary-Treasurer (see the following pages) had been examined and pronounced correct.

(8) The Secretary requested members to submit to him suggestions for the topics of *Yearbooks* for 1920 and succeeding issues.

(9) Meeting adjourned.

GUY M. WHIPPLE, *Secretary*

FINANCIAL REPORT OF THE SECRETARY-TREASURER OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION, JANUARY 1, 1919 TO JANUARY 1, 1920, INCLUSIVE

RECEIPTS FOR 1918

Balance on hand December 31, 1919			$2,204.33
From sale of *Yearbooks* by the Public School Publishing Company:			
June to December, 1918	$1,018.17		
January to June, 1919	2,284.08	$3,302.15	
Interest on savings bank account and Liberty Bond:			
Interest on savings to January 1, 1920	$ 39.89		
Interest on Liberty Bond	41.45	$ 81.34	
Dues from 1186 members, (1919 and advance 1920)		$3,303.16	
Total income for the year			$6,686.65
Total receipts, including initial balance			$8,890.98

EXPENDITURES FOR 1919

Publishing and Distributing Yearbooks:		
Reprinting 500 *15th Yearbook, Pt. II*	$ 152.80	
Reprinting 1000 *15th Yearbook, Pt. III*	194.92	
Reprinting 1000 *16th Yearbook, Pt. I*	212.30	
Reprinting 503 *16th Yearbook, Pt. II*	119.19	
Reprinting 1500 *17th Yearbook, Pt. I*	249.02	
Printing 3000 *18th Yearbook, Pt. I*	1,572.38	
Plating, *18th Yearbook, Pt. I*	192.00	
Printing 3000 *18th Yearbook, Pt. II*	538.43	
Plating, *18th Yearbook, Pt. II*	105.90	
Excess printing, *18th Yearbook, Pts. I* and *II*	181.00	
Distributing *18th Yearbooks*	188.94	
Reprinting 2000 *18th Yearbook, Pt. II*	295.10	
Corrections and cuts, *18th Yearbook, Pts. I* and *II*	75.45	
Drawings for *19th Yearbook, Pt. I*	7.50	
Typing for *19th Yearbook, Pt. I*	9.60	
Premium on fire insurance ($5,000)	15.12	
Total cost of *Yearbooks*		$4,109.65
Secretary's Office:		
Secretary's salary, one year, to end of Chicago meeting	$ 500.00	
Secretary's expenses attending Chicago meeting	68.31	
Bookkeeping and other clerical assistance	78.00	
Stamps	85.00	
Stationery	69.05	
Express	2.60	
Telephone and telegraph	4.86	
Dues refunded	3.00	
Total for Secretary's office		$ 810.82
Paid for $500 Liberty Bond (Fourth Loan)		462.70
Total expenditures		$5,383.17

SUMMARY

Total expenditures for 1919			$5,383.17
Balance on hand, January 1, 1920	Savings account	$1,209.00	
	Bonds	1,462.70	
	Checking account	836.11	3,507.81
Total			$8,890.98

MEMBERSHIP, JANUARY 1, 1920
(Paid in advance for 1920)

Honorary members	4
Active members	351
Associate members	516
Total membership	871

GUY M. WHIPPLE, *Secretary-Treasurer.*

INFORMATION CONCERNING THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION AND ITS YEARBOOKS

The purpose of the National Society is to promote the investigation and discussion of educational questions. Anyone who is interested in receiving its publications may become a member. The *Yearbooks* are issued in several parts each year and are discussed at the annual meeting, which is held in February at the same time and place as the meeting of the Department of Superintendence of the National Education Association. There are two types of membership, associate and active. Associate members pay $1.00 annually and receive one copy of each Yearbook. Active members pay $2.00 annually, receive two copies of each Yearbook, and are eligible to vote and hold office in the Society. In accordance with the vote of the Society at Chicago, February 24, 1919, the Constitution has now been changed so as to provide that new members pay an entrance, or election, fee of one dollar, in addition to the first year's dues. The object of this change was to offset the sharp increase in the cost of manufacturing and distributing the *Yearbooks* and also to discourage those who joined the Society for one year only in order to secure the *Yearbooks* at less than the commercial selling price.

The *Yearbooks* deal in a practical way with fundamental current issues in instruction and school administration. Orders for the *Yearbooks* for the current year or earlier or for single parts of the *Yearbook* for the current year are handled directly as commercial sales, by the Public School Publishing Company, Bloomington, Illinois, at the rates indicated on the cover of this monograph.

To become a member of the Society, simply send name and address, together with check for the appropriate amount ($3 for new active membership, $2 for new associate membership), to the Secretary of the Society.

GUY M. WHIPPLE, *Secretary-Treasurer.*

University of Michigan
Ann Arbor, Michigan

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Detailed circular on application

PUBLICATIONS OF THE NATIONAL SOCIETY FOR THE

THE NINETEENTH YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

PART II

AGENTS
PUBLIC SCHOOL PUBLISHING COMPANY
BLOOMINGTON, ILLINOIS
PUBLISHERS OF ALL OF THE YEARBOOKS OF THE SOCIETY

THE NINETEENTH YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

PART II

CLASSROOM PROBLEMS IN THE EDUCATION OF GIFTED CHILDREN

BY

THEODORE S. HENRY

Professor of Pyschology, Western State Normal School,
Kalamazoo, Michigan

Edited by Guy Montrose Whipple

THIS YEARBOOK WILL BE DISCUSSED AT THE CLEVELAND MEETING OF THE NATIONAL SOCIETY, MONDAY FEBRUARY 23, 1920, 8:00 P.M.

PUBLIC SCHOOL PUBLISHING COMPANY
BLOOMINGTON, ILLINOIS
1920

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(The Year Indicates Date of Expiration of Term)

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University of California, Berkeley, California

TABLE OF CONTENTS

EDITOR'S PREFACE

If any apology is needed for bringing to the attention of members of the Society the work of one of my former associates, it will be found in the significance of the work itself. To anyone who notes the evolution of educational thought and practice, it must be evident that one of the most clearly evident tendencies of the present day is the "psychologizing" of instruction—the fitting of educational agencies to the needs of the individual pupil. For several years we have recognized the needs of pupils of subnormal mentality. We are now perceiving more clearly the even more crying needs of pupils of supernormal mentality. This *Yearbook* ought to render these needs more evident and at the same time point out how in some measure they may be met.

G. M. W.

CLASSROOM PROBLEMS IN THE EDUCATION OF GIFTED CHILDREN*

INTRODUCTION

One of the most significant of modern tendencies in educational administration is revealed in the widespread attempts which are being made to adjust the subject matter and methods of the school to the varying needs and capabilities of the children whom it is the purpose of the school to serve. Instead of holding to a rigid scheme of gradation, adjusted to the theoretical "average child," to which all children must be made to conform, those who are in charge of public-school systems are coming to see the advisability of making a more flexible arrangement and a more careful adjustment to the varying aptitudes and capacities of the members of the school population. In other words, there is going on something which has been termed the "psychologizing" of school organization, as well as of school instruction.

Naturally enough, in the movement better to adjust the school to the individual child, as well as to the needs of society, deficient, defective, and subnormal children first came in for attention. They appealed to our sympathy and philanthropy. They were considered a detriment to the work of the normal pupils. It was evident that at best they would be more or less of a burden upon society after their schooldays, as well as in their childhood, and that, therefore, whatever the school might do toward better fitting them to make their own way would be a distinct service to society, as well

* This investigation was suggested and directed by Dr. Guy M. Whipple, at that time Professor of Education in the University of Illinois, now of the University of Michigan. Material assistance in its pursuit was received from Miss Genevieve Coy, at present connected with the Department of Psychology, Ohio State University, and Dr. H. T. Manuel, Professor of Psychology in the Gunnison, Colorado, State Normal School. Acknowledgements are also due the large number of public school officials and teachers who responded to requests for information.

as a benevolence to the afflicted. As a result of the interest aroused in the education of such children, there has developed a distinctive pedagogy of subnormal children, which has assumed quite respectable proportions.

While no one could object to what has been done to make life less burdensome to those who have entered into it under handicaps so heavy, it cannot be denied that if differentiation of instruction is to be confined to those at the lower end of the scale of mental ability, such differentiation is at best one-sided. A division of classes which is made merely by separating from the average those who fall below it is a step in the right direction, but a step that needs another to complement it. In order to bring about a proper balance, provision should also be made for those more fortunate individuals, who, by reason of better and larger gifts, stand at the upper end of the scale. This one-sidedness has only lately begun to receive the attention of educators. Interest in special provision for children of superior mental powers was first exhibited by practical schoolmen. Harris in Saint Louis, Van Sickle in Baltimore, Kendall in Indianapolis, as well as others, became interested in the subject, and not only put into operation within their own school systems, schemes for adapting the school program to the peculiar and distinctive needs of the bright child, but did much in their publications and addresses to arouse a similar interest in other quarters. Petzoldt,[1] in Germany, has carried on an active campaign for the establishment of special schools for gifted children, and has not been daunted by the rather fierce attacks of his critics; while Sickinger, at Mannheim, included in his well-known system provision for such pupils as were fitted to do extra work.

The efforts of these practical school administrators have been given impetus by those psychologists who have been contributing to the psychology of individual differences. Stern has not only given us his important work on individual psychology,[2] but has made a definite plea for special classes for such pupils as are endowed with

[1] Petzoldt, J. Sonderschulen für hervorragend Befähigte. *Neue Jahrbücher für die Pädagogik,* 14: 1905, 425–456. Also Die Einwände gegen Sonderschulen. *Neue Jahrbücher für Pädagogik,* 28:1911, 1–24.

[2] Stern, W. *Die differentielle Psychologie.*

superior general intelligence.[3] In America, Goddard, Terman,[4] and Whipple[5] have done much to further the interest in special educational facilities for bright children, especially the last-named, to whom we owe the term "gifted" as the standard designation of children of supernormal ability. All these efforts have had their effect, and it is safe to say that at the present time there is a wide and growing interest in the education of the supernormal child and the best means by which it may be brought about. During the past ten years these topics have received increased attention in the meetings of the National Education Association, the reports of the United States Commissioner of Education, the bulletins of the Bureau of Education, and in the various school journals. Many cities and towns are already making special provision for gifted pupils, either by schemes of flexible grading, or by special rooms or classes for them, and others are definitely planning to make such provision as soon as it may be possible or feasible.

The arguments in favor of special educational provision for bright children are both social and individualistic. From the former standpoint, society cannot afford the loss entailed upon it by the incomplete development of its most able and competent members. On the individualistic side, every child, whether subnormal, normal, or supernormal, has a right to that kind of education which is best suited to his powers and his needs. There is a moral question involved, also. It is just as important for the bright child to acquire correct habits of work as it is for the dull or average child to do so, whereas in the ordinary class the brightest children are likely to have from a fourth to a half of their time in which to loaf, and never or rarely have the opportunity of knowing what it means to work up to the limit of their powers. The consequent habits of indolence, carelessness, and inattention, which are so likely to be formed under such conditions, might be avoided by the provision, for such children, of special courses of such a nature as to fit their peculiar characteristics.

[3] Stern, W. The supernormal child. *Journal of Educational Psychology,* 2: March, April, 1911, 143–148, 181–190.

[4] Terman, L. M. *The Intelligence of School Children.* Boston, 1919. Especially Chs. 10 and 11.

[5] Whipple, G. M., Supernormal children, in Monroe's *Cyclopedia of Education.* Also *Classes for Gifted Children,* Bloomington, Ill., 1918.

Although the arguments for special provision for gifted children are coming more and more to be recognized as valid, and notwithstanding the general and growing interest in the education of the superior child, we have in the pedagogy of very bright children a field as yet practically untouched. From the Report of the United States Commissioner of Education for 1915 I quote the following paragraph:

"The public is becoming interested in the supernormal child; the press is eager for information regarding this type of child; and the school is rapidly becoming aware that it has neglected this problem. Rapid advancement classes are held for these children in certain cities, in others extra work is given them in the regular classes. But as yet few cities have had the courage to develop a program exactly fitted to their needs, nor have the psychological clinics said much regarding tests to discover the supernormal."[6]

It is within this neglected field of the pedagogy of gifted children that this study aims to make its contribution. The study is based upon the observation of the experimental room which is described at a later place in the text. This room was under the author's constant oversight, and he had the privilege of doing some teaching in it. Other information was obtained through the inspection of two different types of special rooms for bright children, which form a part of the school system of Louisville, Kentucky. An investigation has also been made of a large number of school reports of various cities, and an extensive correspondence has been carried on with city superintendents whose school systems include definite and special provision for bright children, as well as with teachers in charge of special groups or classes of such children. Other rooms of the same grade in the school in which the experimental room was located afforded a control group for the purpose of various educational and psychological tests which were given to both groups by a trained psychologist, and upon the results of which many of the conclusions of the study are based. The author found that the experience he had obtained in twelve years of teaching and supervision in public-school systems was of material assistance in his observation of the experimental room and in fact led him to generalizations that might not have been possible without this background of experience with ordinary elementary-school classes.

[6] *Report of United States Commissioner of Education*, 1915, Vol. I, p. 40.

CHAPTER I

FLEXIBLE PROMOTION SCHEMES AS RELATED TO THE SCHOOL PROGRESS OF GIFTED CHILDREN

Many efforts have been made in various localities toward the solution of the problem of making school promotion fit different intellectual grades—ungraded classes, more rapid promotion through special coaching and through systems of flexible grading, methods of dividing grades into groups according to intellectual ability and progressing at different rates, etc. The different provisions for flexible grading which have been, or are now, in vogue in different places have been so well described by others as to render unnecessary any lengthy or detailed discussion of them at this time.[1] At the risk of unnecessary repetition, however, it has been thought best to give a brief treatment of them, both because they are related to the general question of the school progress of gifted children, and also because, historically speaking, out of these the special room or class for gifted pupils has evolved.

To Dr. W. T. Harris, Superintendent of the Saint Louis schools from 1867 to 1880, and United States Commissioner of Education from 1889 to 1906, is due the credit for the first comprehensive plan to introduce flexibility into the classification of the graded school. The features and merits of his plan are discussed in his reports for 1868–69 and 1871–72–73. He described his scheme before the members of the National Education Association in 1872, and in 1874 he included in his report a still more detailed account of the plan.[2] It is based upon a short-interval system of promotion by which pupils, at least in the lower grades, are promoted every five

[1] Holmes, W. H., *School Organization and the Individual Child.*

McDonald, R. A. F., *Adjustment of School Organization to Various Population Groups.* Teachers College, Columbia University, Contributions to Education, No. 75.

Van Sickle, J. H., Witmer, L., and Ayres, L. P., Provision for Exceptional Children in Public Schools. *United States Bureau of Education, Bulletin 1911, No. 14.*

[2] In addition to the reports cited above, see also, by the same author, Class Intervals in the Graded Schools, *Proc. Nat. Educ. Assoc.*, 1900, pp. 323–340.

weeks, with an arrangement which makes it possible for the few best pupils in each section or class to be united with the class or section next above them. This plan is of special interest to us because it is primarily a plan for hurrying along bright pupils for the purpose of keeping the upper grades from being depleted by withdrawals, and one of the features which Dr. Harris urged in its favor was that it tends to hold bright pupils up to the work of which they are capable and keeps them from acquiring habits of carelessness and listlessness.

At the meeting of the National Education Association in 1898, considerable time was devoted to a discussion of the topics of grading and promotion, with reference to the needs of the individual pupil.[3] Just at this time, there were a few schoolmen who were very enthusiastic over the matter, and were doing all in their power to get others to share their enthusiasm. It was not until about the year 1900, however, that they were able to make much impression upon the general indifference that had prevailed. It may be said, then, that the year 1900 marked a very radical change in the general attitude toward flexibility within the school organization, so that one of the distinctive characteristics of the period since then has been an enthusiastic endeavor to provide for individual differences among pupils, even to the extent of organizing special classes or special schools for students whose interests are of different kinds and who are of different degrees of ability.

This change of attitude was due largely to the activities of two men (besides Dr. Harris)—Superintendent Preston W. Search, of Pueblo, Colorado, and Superintendent W. J. Shearer, of Elizabeth, New Jersey. The latter, about 1886, had devised what is known as the "Elizabeth Plan," and in 1898 published a book devoted to its merits.[4] This plan does not differ radically from the Saint Louis plan; its dominant feature consists in grouping together in separate rooms those pupils who are of about equal ability and attainments. Each of the eight grades, accordingly, is divided into three or four sections. Each section is allowed to do as much work as it can and to advance as rapidly as it is able, while as soon as a pupil shows that he is capable of handling the work of the next section, he is

[3] *Proc. Nat. Educ. Assoc.*, 1898. Papers on Grading and Promotion.

[4] Shearer, W. J., *The Grading of Schools*, 1898.

promoted without any formal examination. It will be seen at once that, like the Saint Louis plan, this plan is essentially a device for accelerating the progress of the more competent pupils.

The plan devised by Superintendent Search is known as the "Pueblo Plan," and is different from the two which have just been mentioned, in that class instruction is done away with, and the individual determines his own rate of progress. In 1901 Search published his book: *An Ideal School*, in which considerable space is devoted to a discussion of the different degrees of ability to be found within the membership of an ordinary high-school class. He describes an experiment conducted with a Caesar class in the Central High School, of Pueblo, in which 24 pupils worked one and one-half hours a day for 100 days under individual instruction, without any home work, and says that the study "shows conclusively that even in a 'well-graded class' there are some pupils who can do three times as much work as others." He also refers to a similar experiment carried on at Holyoke, Massachusetts, where 24 members of a class in arithmetic were permitted to travel each at his own rate for a given period of time, and in which similar results were obtained, without any sacrifice of quality for the sake of quantity on the part of the more rapidly moving members of the class.[5] While Search argues that his plan gives rapid workers "full, free opportunity to live up to the best that is within them," the chief aim in practice seems to have been to take care of the backward pupils, rather than of those who might be able to advance more rapidly than usual.

One of the best known of the schemes for flexible grading is the "Double-Track Plan," or "Cambridge Plan," as developed in the city of that name in Massachusetts. This plan came into existence about 1891, and was a modification of the last six years of a nine-year course. Special, or "coach" teachers were employed to aid those pupils who seemed unable to do the work in the regular time, as well as to aid in the progress of those who appeared capable of doing the work in less than the allotted six years. On one 'track' the course was divided into six sections, on the other into four; each section covered a year's work. Those pupils who took this course in six years were classified in the regular grades, while those who took it in four years were classified in four grades—A, B, C, and D. Pupils

[5] Search, P. W. *An Ideal School*, pp. 28–32.

promoted to the grammar schools began the first year's work together, but after two or three months they were divided into two sections, upon the basis of their ability. The upper section, composed of the brighter pupils, completed one-fourth of the course of study in the year, while the other division completed only one-sixth. It was also possible for the pupil to change from the fast to the slow 'track,' or *vice versa*, at the middle of the course, and thus to finish the course in five years.

In the form in which it has just been described, this plan was in operation in Cambridge about 17 years. During this time 10,203 pupils graduated from the grammar schools, of whom 7 per cent completed the course in four years, 28 per cent in five years, 50 per cent in six years, and 15 per cent in seven or more years. In 1910, a modification of this plan was introduced. The basal course of the new Cambridge plan is eight years in length, and each year, except the last, is divided into three grades. The last year comprises only two grades, which makes a total of twenty-three grades for the eight years. Each of these grades covers the work of about three months, except in the eighth year, where the grade is five months in length. Supplementary to the regular course, there is a parallel course which covers the same subject matter in six years. In this course there are 17 grades, so that the work assigned to each grade is about a third more than to the corresponding grade of the regular course. If a pupil fails to carry the work of his grade, he is asked to repeat only three months' work. If he is in the shorter course and fails to keep up, he may transfer to the regular course, with a loss of not more than two months' time; or if he is in the basal course and able to do more work than is there required of him, he may be transferred to the supplementary course, with not to exceed two months' repetition of work at the transfer. So many are the opportunities for passing from one course to the other, that the rate of progress may be varied to meet any need.[6]

Before the old Cambridge plan had given way to the plan as it now exists, it was adopted, with some extensions, by two small cities of Iowa—Odebolt and Le Mars, and as thus modified it goes under the name of one or the other of these towns. The "Le Mars Plan," or "Odebolt Plan," comprises nine grades, with two courses,

[6] Cambridge, Mass., School Committee: Annual Reports, 1908, 1910.

one of six and the other of nine years. These courses are parallel and so arranged as to permit a transfer of pupils from the one to the other at several different points. The six-year course is divided into three two-year cycles, while the nine-year course is made up of three three-year cycles. The end of a cycle affords a point of transfer, so that a student may complete the course in six, seven, eight, or nine years, according to his ability, and the superior pupil is never required to 'mark time.'[7]

In 1897, Portland, Oregon, adopted a modified form of the Cambridge plan, in which the entire course of study is divided into 54 parts, making up 18 terms of five months each. Regular promotions take place at the end of each term, and are by subjects, instead of by averages of class marks. The work of a year and a half comprises a cycle, and at the beginning of each such cycle those pupils who have come to the same point in the course of study are separated into two divisions, a fast division which is to advance at the rate of four parts of the course of study each term, and a slow division which covers only three parts in the same time. Reclassifications may take place at the end of any cycle. Those pupils who remain constantly in the first division will be able to complete the course in seven years, an arrangement which, again, is advantageous for the capable pupil.[8]

About 1895, while J. H. Van Sickle was superintendent of the North Side Schools of Denver, Colorado, he put into operation in his schools a plan which was designed to provide opportunity for the brighter children of each class to develop their individuality by doing work which was more extended and more intensive than that done by the slower members. The special feature of this plan is the provision of extra work for the capable children, to be done by them during free periods, while the other children are reciting. Home work is reduced to a minimum, and every encouragement is given to the selected pupils to depend more and more upon their own initiative and to push ahead as fast as they can. The plan is not, however, primarily a device for gaining time, as the feature of saving time in the course receives far less emphasis than is placed upon the opportunity for self-development by following out some special topic

[7] Holmes, W. H., *School Organization and the Individual Child*, pp. 39–43.

[8] Holmes, W. H., *Op. cit.*, pp. 43–45.

of personal interest, after the minimum of each study for which all pupils are held responsible has been mastered.[9]

The "Santa Barbara Concentric Plan," as worked out in the schools of Santa Barbara, California, divides each grade into A, B, and C sections. Each section must master the same fundamental principles for each of the subjects, but the A pupils do more extensive work than the B pupils, and the B more than the C. Transfers may take place from section to section within the grade at any time, and just as soon as the A pupils of any grade are ready for the work of the next grade they are promoted to the C section of that grade. In this plan, too, emphasis is put upon the enrichment of the course of study for the more capable children, rather than upon their more rapid advancement in the course, although there is opportunity for the latter to take place.[10]

In Chicago, New York, and other cities there has been in use for some twenty years a plan known as the "Group System," or "Large-School Plan." Because of the large number of pupils in city schools, it is possible to have in each grade three or more classes and to group the pupils according to ability, with the bright students in one class, the slow in another, and the medium in still others. The group system has been worked out in two ways, which are designated as (1) the "Constant-Group System," and (2) the "Shifting-Group System." In the operation of the constant-group method, the membership of the class remains the same for a definite period, and promotions are made only at regular and stated intervals. Divisions must be provided in nearly all subjects of the course, and students in the most advanced sections may pass to a higher grade in those subjects in which they are prepared to do the advanced work, without having to be equally well prepared in the other subjects. In the shifting-group method, there may be as many groups in as many subjects as the teacher thinks best, and promotions may take place at any time. The aim in the shifting group is to encourage the bright pupils to do thorough and careful work while the slow pupils are being brought up to the grade standard. The primary aim of the

[9] Van Sickle, J. H., Witmer, L., and Ayres, L. P. Provision for Exceptional Children in Public Schools. *U. S. Bureau of Education Bulletin*, 1911, No. 14, p. 38.

[10] Burk, Caroline F., Promotion of bright and slow children. *Educational Review*, 19: March, 1900, 296–302.

constant-group method, on the other hand, is to give to the bright pupil opportunity to advance as rapidly as possible.[11]

During the superintendency of Dr. F. E. Spaulding at Newton, Massachusetts (1904–14), a plan was developed which, with some modifications, has become very popular. In this "Newton Plan" the elementary program of studies is arranged in the customary eight grades, and each grade offers, on the average, an amount of work sufficient for one year. The chief purpose of the grade lines, however, is to locate teachers and pupils as to the work they are doing at any particular time; the lines form no barrier to the advancement of the pupils. The distinctive feature of this scheme is the employment of unassigned teachers, who have no regular class and whose work is entirely supplementary to that of the regular class teachers. The unassigned teacher is in charge of a special room, to which come individual pupils or groups of pupils for such special assistance as they may need. Usually the pupils who seek this help are those who have been retarded and are trying to get up to grade, but sometimes they are bright pupils who are endeavoring to gain a grade in their school progress. The system of gradation is so flexible that whenever the work of the grade is completed in any subject by a single pupil, a class, or a group, the work of the next grade is taken up in that subject, without regard to the time of the school year.[12]

A unique double promotion system, which has been called the "Double Tillage Plan" was in operation in Woburn, Massachusetts, from 1894 to 1903. In this plan the year's work for each grade was covered in the first half-year, and then gone over again in greater detail during the second half-year, an arrangement which made it possible for bright pupils to be promoted at the middle of the year, thereby doing two years' work in one. This plan was in operation during nine years, and during that time 1,252 pupils received mid-year promotions, of whom 938 obtained a second promotion at the end of the year. In the later years of the plan, the subject matter of the curriculum was increased to an extent which made it very

[11] Holmes, W. H., *School Organization and the Individual Child*, pp. 51–54.

Van Sickle, J. H., Witmer, L., and Ayres, L. P. Provision for Exceptional Children in Public Schools, *United States Bureau of Education, Bulletin* 1911, No. 14, p. 39.

[12] Newton, Massachusetts, School Committee. Annual Report, 1913. Holmes, W. H., *School Organization and the Individual Child*, pp. 63–68.

difficult to do a year's work in the half-year, and consequently greatly decreased the number of extra promotions. As a result of these conditions, the plan was abandoned, except in the first and second grades.[13]

Plans for flexible grading have become quite popular, and a great number of the cities of the country, small as well as large, have adopted some one of these plans or some modification of it. Many school systems have made combinations by picking out from two or three of the different schemes those features which seemed best suited to local needs. An example of such an adaptation to the requirements of a small system is found in a plan of grade promotion which has been worked out by Superintendent P. F. Neverman, of New Richmond, Wisconsin, and which is in operation at the present time in his schools. Superintendent Neverman bases the "New Richmond Plan" upon the conviction that the ordinary child, as well as the child of exceptional ability, can do the work of the eight grades in less than the allotted time; that the association in the same classes of average, superior, and slow pupils is hurtful to all the pupils, no matter of which type, that all children should be together during the first grade; and that all should do all the work called for in the program of studies. When children enter the first grade of the New Richmond schools, they are treated as individuals of equal ability, but later in the year they are separated into A and B sections, which are adjusted and readjusted throughout the whole year. At the end of the year, a careful list is made of all the especially apt children who have been regular in their attendance, and who are physically in good condition, and they are promoted to the A class of the second grade, while the rest of the first-grade pupils who earn promotion go to the B section. The A section will do one and one-third year's work during the second year, while the B section is doing only the regular year's work, and will thus gain one-third of a year. If at any time a child in the B section develops to such an extent that he appears able to do more work than his class is doing, he may be transferred to the A section at once. This arrangement holds through the fourth grade, at the end of which time the pupils who have

[13] McDonald, R. A. F. *Adjustment of School Organization to Various Population Groups*. Teachers College, Columbia University Contributions to Education, No. 75, p. 95. See also *Woburn, Massachusetts, School Committee. Annual Reports*, 1903, 1904.

remained in the A section have completed the fifth-grade work and are promoted to the junior high school, and the members of the B section take up the work of the fifth grade, in which there is only one section.[14]

Similar plans of grouping children according to their ability, especially in the lower grades, are found in many parts of the country. In Carthage, New York, for instance, all entrants who are unable to read, begin their school work in the first grade in much the same fashion. Gradually they are regrouped so as to form three divisions, of which the first, made up of the most capable, completes a certain amount of work in one year. The second group is allowed one and one-half years in which to do the same amount of work, and the third group does it in two years. Before the close of the first year, it may have happened that each of the three groups has been re-divided into higher and lower groups.[15] Bloomington, Indiana, has the plan of grouping the bright children together in any grade, especially in the primary grades, and these bright groups are permitted to advance through the regular course of study in a shorter time than the other grades.[16] In Johnstown, Pennsylvania, for several years the upper-grade children have been congregated in one building and the lower-grade children in another, and the various sections of the same grade have been divided into fast, intermediate, and slow-moving groups. Each group covers the entire work for the year, but the bright group not only covers it more thoroughly, but more intensively than the other groups, and invariably gains time. In the school-year 1915–16 about 12 per cent of the pupils in the elementary schools gained from one-half to one year of school time; 44 per cent of those that made time in the first half-year were in the first three grades; and in the latter half, 80 per cent were in the first three grades.[17]

At Arlington, Massachusetts, the plan of grouping pupils according to their ability is extended to the high school. In the Arlington

[14] Neverman, P. F. New Richmond plan of grade promotion. *American School Board Journal*, 54: January, 1917, 38.

[15] Deffenbaugh, W. S. Current Progress in Schools of Cities of 25,000 Population or Less, *United States Commissioner of Education, Report*, 1914, Vol. I, p. 97.

[16] Letter from Superintendent W. A. Myers.

[17] Letter from Superintendent J. N. Adee.

High School, pupils of about the same ability, as determined by the teachers' observations and the pupils' grades for the previous year, are grouped together at the beginning of the year. At the end of the first two months, any cases of obvious misplacement are dealt with by means of redistribution, and whatever changes in grouping seem necessary are made every two months thereafter throughout the year. In every subject in which the plan is used there are three classifications, rated as (1) honor, (2) medium, and (3) slow. The honor groups do more work in a given subject than the medium and slow, but the latter are expected to cover at least the minimal requirements for promotion. The work done by the medium and slow groups is said to be about the same as that required of a regular class, based on the traditional methods of selection. In order to earn promotion in any group a pupil must have an average better than D (67-69). Marks below B (80-89) are seldom found in the honor groups and marks above C (70-79) are seldom found in the slow groups.[18]

The plan of promoting by separate subjects, rather than by the average mark for all subjects in the grade, sometimes works to the advantage of the bright pupils by making it easier for them to catch up with the grade above them, especially when there is added a provision for individual promotion. Superintendent A. N. Farmer, who used such a scheme in the schools of Evanston, Illinois, said of it, in a letter to the author:

"The whole plan is based on the theory that children differ in their abilities, capacities and aptitudes. It not infrequently happens that a considerable part of the class is forced to sit idly by while the teacher is struggling to make clear a point which one or more in the group has failed to grasp. It is our purpose to give to every child an opportunity to progress as rapidly as he is able to go. The great majority of youngsters will keep together. Those who are exceptional, either because they are slow or particularly able, will be limited in their progress only by their own ability to go on."

Because it so clearly indicates the object of this plan and the method of its operation, as well as to show how it offers inducements

[18] Clerk, F. E. The Arlington plan of grouping pupils according to ability in the Arlington High School, Arlington, Massachusetts. *School Review*, 25: January, 1917, 26–47.

to the bright pupil, I take the liberty of quoting a circular letter which Superintendent Farmer sent to the pupils in his schools at the time when the plan was adopted.

"To the Boys and Girls in the Evanston Public Schools of District 75:

"Have you ever felt that you could get on more rapidly in school if you had a chance? Have you ever felt discouraged when you have failed in part of your work and lost a whole year? If you have, you will be interested in a new plan for promoting pupils which has just been adopted.

"The reason for the change is that we want to give every boy and girl a chance to do his school work as quickly as he is able to do it. It is possible that you are strong enough to do three years' work in two. Perhaps you are able to go on rapidly in some subjects, while in others you need more time. Whatever your abilities are, we want to help you to make the most of them, so that you may prepare for high school as quickly as possible and without loss of time.

"Under the new plan we shall have two kinds of promotion, regular and special.

"Regular promotions will come twice a year—about February first and again in June. You will be required to do over again only the subjects in which you have failed. If, for example, you are a fifth-grade pupil and have done satisfactory work in everything except geography and spelling, you will be allowed to do sixth-grade work in all your subjects except in geography and spelling. These you will do with the fifth grade and everything possible will be done to help you to 'catch up' with the sixth grade in these subjects also. *Whether you succeed or not will depend on how hard you are willing and able to work.*

"Special promotion will be made at any time when a pupil shows he is able to do the work of a higher grade in one or more subjects. Suppose, for example, you are in a fourth grade and are strong in arithmetic. If you show that you are able to do much more than the class is doing in this subject, a chance will be given for you to work ahead and when you are ready you will be allowed to take arithmetic with the fifth grade. By this plan you may be able to work ahead and gain much time.

"I sincerely hope that you will think over this plan, talk it over with your father and mother and teacher. I shall be glad to have you write me about any plans you want to make regarding your present or future school work. Perhaps you will want to *earn a special promotion in some subject you do particularly well.* If so, please remember that we shall be glad to help you in every way we can. It pays to look ahead and plan for the future."

A plan practically identical with this is in use at Fond du Lac, Wisconsin. In the elementary schools of that city, promotion is by separate subjects, not by grades, and at any time when ability to carry the work in an advanced grade is shown. "When a pupil is noticeable because of excellent work in any subject and his scholarship in general warrants the effort, and his physical strength is considered sufficient, he is given special help in that subject, sometimes by a parent, more often by teacher or principal, until he has bridged the gap between his grade and the succeeding grade, and is then advanced in that subject. This is not done without consultation with the parent and a willingness evidenced for the effort to be made."[19]

The traditional, and probably the most common, method of dealing with the supernormal child in the school has been merely to let him skip a grade or a class. The most extensive study of this procedure and its results is one, as yet unpublished, made by Mr. B. Q. Hoskinson, at present Superintendent of schools at Pinckneyville, Illinois, while pursuing advanced work at the University of Illinois.[20] He studied a group of 84 college students and 44 school children, all of whom had been permitted to skip at least a half year of the regular school course. Of the college students, 67 had skipped an entire grade. Of the whole group 81 per cent had gifted ancestors; 83 per cent had healthy parents; 90 per cent were healthy as children; 93 per cent were regular in school attendance; 93 per cent were undoubtedly able in school work; 88 per cent had been urged by school authorities to gain time in this way; only 3 per cent had ever repeated a grade; 87 per cent believed that the skipping had been advantageous to them; and in 75 per cent of the cases the grades skipped had been below the seventh. As a class these accelerates were found to be rapid readers, quick learners, earnest, industrious, and able to concentrate. They were given to exploration of material on their own account, were kept in good condition at home, and had a good attitude toward the school instilled into them by their parents. The advantages to the individual most often named were the saving of time, and the opportunity for keeping busy and interested. Dis-

[19] Roberts, Superintendent J. E. *A Working Scheme of Promotional Efficiency.*

[20] Hoskinson, B. Q. *The School Progress of Gifted Children.* Unpublished master's essay in the library of the University of Illinois.

advantages mentioned were the disturbance of social adjustments, and, less often, difficulty in keeping up with advanced work. In concluding his study, Hoskinson recommends that in country, village, and small-town schools, the best ten per cent of pupils be allowed to skip in grades below the seventh, if health be sound, with some provision to bridge the gap, if only by a few hours of special assistance at home or at school.

The plan of permitting the brighter pupils to skip a part of the course has the advantage of being easy of operation, so far as surface indications go, at any rate; for it does not interfere with any system of grading or promotion which the particular school has adopted. It is objectionable, however, in that it offers nothing by way of constructive detail and does not partake of the nature of a positive program, rather having the appearance of a mere make-shift. Opportunity to skip a grade usually comes to a child only through a suggestion by the teacher; and unless the school system has some definite and organized way of determining who shall be entitled to skip grades, and some method of searching for all pupils who have the ability to do so, opportunity to skip a grade is likely to be the result of the mere chance of obtaining the interest of a teacher who has initiative and energy enough to follow the matter up. In some school systems, however, special promotions are featured and teachers are made to recognize it as a part of their duties to be on the watch for all possible chances to bring such promotions about. Thus, in Salt Lake City the plan of treatment of very bright children is by special promotion, although in certain instances where special promotion does not seem advisable, bright children are assigned supplementary reading or extra work in the fine and applied arts.[21] Much the same thing is done in Kansas City, Missouri, where, in addition to a flexible promotion system, making special promotions easy to adjust, exceptionally bright children are given an opportunity to do broader work than is given to the average child. This is done in the way of additional assignments, additional work in supplementary reading, and other special work of a similar nature.[22] In Kansas City, however, it was found that less than three per cent of the elementary school enrollment received special promotions, demotions,

[21] Letter from Superintendent E. A. Smith.

[22] Letter from Superintendent I. I. Cammack.

or double promotions during one-third of the school year 1914–15, and that it was two and one-half times easier for a pupil to secure a special promotion in the same room than to a higher class in another room, although the 'distance' between the two classes is no greater in the one case than in the other.[23] Obviously, then, even when the special promotion plan is definitely recognized as a means of promoting the advancement of bright pupils, grade lines put a limitation upon the child's opportunity to gain special promotion, and it may very well be that lack of interest on the part of the teacher, or some other personal factor, is largely to blame for that limitation.

One way in which the objectionable features of special promotion which involves the skipping of any part of the course may be greatly lessened, consists in shortening the promotion interval, so that the amount of subject matter to be made up is correspondingly lessened. On the other hand, it is clear that if that interval be made very short, many more special promotions are necessary in order to make a gain of a year or a half-year in the course, and consequently many more, though slighter ajdustments must be made. In the Saint Louis public schools, as they are now organized, each grade is divided into four quarters of ten weeks each, and when a class finishes a quarter, the members are promoted to the next quarter, even though they remain in the same room where they have been. In the larger elementary schools there are classes for each of the thirty-two quarters of the eight-year course. The time which each class will spend upon the work of a quarter depends largely upon the policy of the principal, who is given great liberty in this matter. Frequently a class will do thirty weeks' work in twenty, and sometimes one will be found able to do twenty weeks' work in ten. In addition to the regular class promotions, individual promotions may be made at any time in the case of pupils who are able to advance faster than the class. Such promotions are made after consultation between the principal and the teacher, and also, in case it seems advisable, conference with the parents. Sometimes pupils who are thus promoted recite with the two classes for a time, and then only with the advanced class. In other words, they skip a quarter. Out of 2,519 graduates of the elementary schools whose school records have been examined, twenty

[23] Melcher, G. Studies by the Bureau of Research and Efficiency of Kansas City, Missouri. *The Fifteenth Yearbook of this Society*, p. 131.

per cent had received double promotions, while eighteen per cent had failed. That is, the number of pupils who required three-fourths, or less, of the assigned time to do the work of the grades was slightly larger than the number of those who required more than the assigned time.[24]

In Parkersburg, West Virginia, whenever children are found who are capable of doing the work of the next higher grade, they are allowed to go on to that grade. In this particular system, which is no doubt typical of a great many, promotions are semi-annual, and the special promotion, therefore, involves a jump covering a half-year's work.[25] In Muskogee, Oklahoma, bright children are enrolled and recite in the regular classrooms, though on recommendation of the teacher and principal they may be permitted to skip grades. There are in the schools of that city quite a number of children who have been thus accelerated, and they are doing very well the work of classes advanced for their chronological age. In order to make up for the deficiencies which may occur because of skipping grades, principals will sometimes give special instruction in their offices.[26] In Richmond, Indiana, in the first six grades the bright children, with the slow ones, are coached by the kindergarten teachers and the principals, and, under a flexible system of promotion, are placed at any time in the grade where, in the judgment of the teacher and principal, they can do the best work.[27] Carthage, New York, provides a special teacher in the lower grades whose entire time is expended in coaching backward pupils and helping the brilliant ones to jump to the next higher division,[28] and Coshocton, Ohio, has two such teachers.[29]

At the B. F. Day School in Seattle, frequently during recent years as many as ten per cent of the total enrollment have advanced one year and a half in the course in one year's time. The school has an extra teacher, known as the auxiliary teacher, who devotes about a

[24] Stevens, W. F. Relation of progress of pupils to actual attendance, elementary Schools of Saint Louis, Missouri. *Educational Administration and Supervision*, 3: January, 1917, p. 14.

[25] Letter from Superintendent F. M. Longanecker.

[26] Letter from Superintendent E. S. Monroe.

[27] Letter from Superintendent J. T. Giles.

[28] *United States Commissioner of Education, Report*, 1914, Vol. I, p. 97.

[29] Letter from Superintendent Charles E. Bryant.

fourth of her time to assisting pupils to make special promotions, and the rest of her time in helping other pupils to maintain their present classification. Which ones deserve special promotion is determined by the principal as one of his special problems in supervision, and in conference with the teachers interested. Many of the courses of study allow for a minimum in special cases—an arrangement which is often of advantage in this connection, for in some cases the specially promoted pupil is not held to covering all the material in the course. If some of the ability to do advanced work depends more upon the pupils' ability than upon a definite amount covered in the preceding grades, they may be allowed to skip part of such work entirely.[30]

An examination of the different plans of grading and promotion which we have discussed, including the various plans for special promotions or skipping of classes, will show that each of them makes some provision for capable children in at least one of the following three ways: (1) they do more work than ordinary pupils, but in the same time; or (2) they do a different kind or type of work, with no gain of time; or (3) they are allowed to do the same work, or work differing only slightly from it, but in less time. At first thought, it might seem as if among these different arrangements there might be found one that would fit ideally the needs of the gifted child, but, while they are better than no arrangement at all, they do not, in our judgment, afford the best kind of adaptation of school work to the child whose performance stands out as of a quality far above the average. The schemes for flexible grading, because of the desire on the part of teachers and principal to maintain something like an equality of numbers in the membership of the different classes or groups, operate in such a way as to make the selection of rapidly advancing pupils too broad, unless a considerable number of different groups is provided within each grade; while in the schemes for special promotion, or skipping grades, selection is too likely to rest on mere accident, as has already been shown. These plans are all at fault, too, in that they make only indirectly at best any contribution to that pedagogy of the supernormal, which, as Stern points out, is

[30] Letter from Principal A. S. Gist.
See also Gist, A. S. The acceleration of pupils. *School and Society*, 5: January 27, 1917, 116–118.

needed from a sociological point of view as a counterbalance to the pedagogy of the subnormal. If defective children are entitled to special educational treatment and special study for the purpose of discovering what methods of instruction are best adapted to them, why are not children who are just as far removed from the average, but in the other direction, just as much entitled to special educational opportunity and a special pedagogy? All the arguments for special rooms or classes for the subnormal can be made to apply just as effectively in defense of similar arrangements for the gifted, or supernormal. In truth, educators are beginning to realize the need of special classes or special rooms for gifted children and they have already been established in a number of American cities.

CHAPTER II

SPECIAL ROOMS FOR GIFTED PUPILS

The development of the interest among educators in special facilities for the instruction of gifted pupils may be clearly traced through successive volumes of the Proceedings of the National Education Association, the Bulletins of the United States Bureau of Education, and the Reports of the Commissioner of Education. The discussion of the Saint Louis plan of grading by Dr. W. T. Harris before the National Education Association in 1872, as well as the papers and discussions upon the general topic of grading and promotion at the 1898 meeting, to which we have already referred, incidentally included reference to the needs of abler pupils and explanations of how these needs might be met by the adoption of a more flexible system of grading. During the meeting of the National Council of the National Education Association, at Los Angeles, in July, 1907, Superintendent J. H. Van Sickle, then of Baltimore, pointed out the advantages obtained by making special arrangements for the education of pupils of more than average capability, and described the plans for doing this which were in use in Baltimore and in Worcester, Massachusetts.[1] C. H. Kendall, then Superintendent of Schools at Indianapolis, at the meeting of the Department of Superintendence at Washington, in February, 1908, discussed the advisability of modifying instruction in the case of brilliant pupils, and described the operation of two special rooms for bright children which had just been established in his school system.[2] The preliminary report of the Committee on Provision for Exceptional Children in the Public Schools, made to the National Council in June, 1908, contained a discussion of special schools for bright children and of the principles that should control the course of study in such schools.[3] In an address before the Child Study Section of the National Educa-

[1] *Proc. Nat. Educ. Assoc.*, 1907, pp. 360–361.
[2] Same, 1908, pp. 147–152.
[3] Same, pp. 350–351.

tion Association at the same meeting, Supervising Principal Charles A. A. J. Miller, of Baltimore, argued for a more sympathetic treatment of bright pupils and a more careful consideration of their needs.[4] The Journal of Proceedings for 1910 contains an article by Van Sickle on provision for gifted children in the public schools,[5] and Superintendent J. G. Collicott, of Indianapolis, read before the Department of Superintendence at Cincinnati, in February, 1915, a paper treating of the current methods of dealing with exceptionally bright children in the public schools.[6]

As to reference to gifted children in the publications of the Bureau of Education, Bulletin 1911, Number 14, of that bureau, prepared by J. H. Van Sickle, Lightner Witmer, and L. P. Ayres, and entitled *Provision for Exceptional Children in Public Schools*, contains a thorough-going discussion of the different methods of adapting the work of the school to bright children which were in use at that time, and in the Report of the Commissioner of Education for 1913,[7] and again in the report of the same official for 1915,[8] space is given to a consideration of the same general topic. One very significant feature which may be noted in connection with these publications is that the gifted child seems to have established his right to consideration along with other types of exceptional children, so that no discussion of the education of exceptional children is now complete unless some attention is given to the education of the gifted.

The bulletin published in 1911, to which reference is made above, states that at that time five cities had special classes for gifted children. Witmer,[9] in the Report of the Commissioner of Education for 1913, gives the names of twenty-seven cities making such provision, in addition to the original five. Wallin, in 1914, reports 22 cities as having classes for bright children.[10] Evidently, however, in both these lists there are included some cities whose provision for

[4] Same, pp. 958–959.

[5] Same, 1910, pp. 321 ff.

[6] Same, 1915, pp. 457–462.

[7] *United States Commissioner of Education, Report,* 1913, Vol. I, p. 445.

[8] Same, 1915, Vol. I, p. 40.

[9] Witmer, L. Progress in education of exceptional children in public schools during the year 1913, in *Report of the Commissioner of Education,* 1913, Vol. I, Chap. XX.

[10] Wallin, J. E. W. *The Mental Health of the School Child,* p. 427.

gifted children consisted merely of plans of flexible grading, permitting the unusually able pupil to make more than normally rapid progress through the grades, not of special rooms for gifted children only. Exact figures upon the number of such rooms in existence are difficult to obtain, for the reason that any question as to provision for gifted children is likely to be liberally interpreted. In a doctor's dissertation from Columbia University by R. A. F. McDonald, published in 1915, a list is given of 22 cities that reported "special schools or classes for exceptionally gifted pupils in their public school system."[11] I have checked up this list, and find that one of these cities has never had any other provision for gifted children than an occasional special promotion, another has had a room for backward children, but never one for the gifted, one has a "mixed" room for both dull and gifted(!), and two provide auxiliary teachers who, in addition to coaching backward pupils, give assistance to pupils who are trying for special promotion. In 1917 Miss Elizabeth L. Woods stated that 45 cities had classes formed of gifted children only,[12] but I am sure that these figures were too high, if by "classes" is meant groups of children which are definitely formed for the purpose of receiving a type of instruction different from that given the rest of the school. The more rapidly moving groups which form a part of many of the schemes of flexible grading do, it is true, closely approximate special classes for gifted children, but they are not so definitely established as rightly to be considered special classes, nor is the basis of selection such as to entitle them to the title "gifted," except, perhaps, in a few instances.

In the following discussion of special classes for very bright children, only those will be mentioned which are definitely known to have been established for the particular purpose of meeting the needs of children of marked ability. It is not claimed that the list given here is at all complete even for the spring of 1917 when it was made, but it is authentic, and comprehensive enough to furnish representative illustrations of the various types of such rooms or classes as have existed or are in existence at the present time.

[11] McDonald, R. A. F. *Adjustment of School Organization to Various Population Groups.* Teachers College, Columbia University, Contributions to Education, No. 75.

[12] Woods, Elizabeth L. Provision for the gifted child. *Educational Administration and Supervision,* 3: March, 1917, 139–149.

In 1900, in one of the public schools of New York City there were organized "rapid advancement classes," which concerned themselves exclusively with bright pupils. This arrangement still obtains; that is, principals of individual schools are given permission to organize special classes for the rapid advancement of bright pupils. Many principals organize so-called "plus" classes for the purpose of enabling pupils to cover two terms in one or three terms in two. These classes are formed of exceptionally bright children, though occasionally 'hold-overs' from the term before are admitted. Accelerated classes of another type, known as "E" classes, exist, but these classes are formed to enable over-age pupils to gain a term or two, rather than to hasten the progress of bright pupils. About 1915 rapid-advancement classes were organized in three schools for the purpose of covering the seventh-, eighth-, and ninth-years' work, that is, the last two years of the elementary school and the first year of the high school, in two years. Some among these classes were formed in the Speyer School as an annex to Public School 43, Manhattan. Specially good teachers were selected, and very considerable help was given by the teachers from Teachers College.[13]

The first really definite provision for the acceleration of capable children seems to have been made, however, at Worcester, Massachusetts, where, in September, 1901, so-called "preparatory schools" were opened for the purpose of helping the able child of the upper grades. This plan, we understand, is still in operation. Pupils selected from the different schools of the city are gathered at convenient centers to receive instruction from teachers of more than ordinary ability. At first, these schools received pupils from grades seven, eight, and nine, but entrance from the seventh grade has since been discontinued. In addition to the regular work of the remaining grammar grades, work is given in English, French, German, and Latin; so that after two years of work in these preparatory schools, the pupils enter the high school with a full year's credit in English, French, German, or Latin, and without having slighted any of the grade subjects.[14]

In the fall of 1902, through the efforts of Superintendent J. H. Van Sickle, there were established in Baltimore special classes

[13] Letter from Acting Superintendent Gustave Straubenmüller.

[14] Worcester, Massachusetts, Public Schools. *Annual Reports*, 1902, 1904, 1912.

known as "preparatory centers," which were quite similar to Worcester's preparatory schools. At present (1917) there are three of these preparatory centers in the city, all organized on the departmental plan. The first step in the selection of pupils for these centers is the sending of a circular from the superintendent's office to each elementary-school principal, asking him to have his sixth-grade teachers make out a card for each student in that grade, showing attendance, studiousness, application, ability, and likelihood of success in the work of the preparatory center. These cards are turned in at the superintendent's office where they are gone over and the selection made. A printed circular is then sent out to the parent of each child in the selected group, in order that the arrangement may be fully understood by all.[15] This circular gives such a complete and lucid explanation of the formation and work of the preparatory centers that I take the following quotation from it:

> "Those children who have made a sufficiently good record in the sixth grade may either continue their schooling in the regular seventh and eighth grades, or they may complete the elementary school course in the seventh- and eighth-grade preparatory classes, as their parents prefer.
>
> "In the preparatory classes the regular studies of the grades are continued, but Latin and a modern language, German or French, are offered as additional studies of *high school* grade, together with advanced work in English. In these three extra studies *credits* are allowed which count toward the high-school diploma. The experience of the past thirteen years shows that pupils that have been successful in preparatory-school work can complete the higher course in the Baltimore City College or the girls' high schools in three years, thus saving one year.
>
> "The School Board has authorized (if numbers permit) the arrangement of the studies in the preparatory centers so that boys preparing for the Polytechnic Institute may take advanced work in mathematics instead of Latin. In this way, although there may be no shortening of the time required to secure the Polytechnic Institute diploma, the start that the boys will have secured in high-school mathematics, German, and English, will make their work in the Institute decidedly lighter during the first year and increase their chances of success as Institute students.

[15] Patterson, M. Rose. A Preparatory Center in Baltimore, William Rinehart School No. 52. *Atlantic Educational Journal*, 12: January 1917, 234–238.

"It is essential that pupils who enter these classes shall be of good ability, studious in their habits, and regular in attendance. The amount of work required does not exceed that which such pupils, if in good health, can easily accomplish by systematic and daily effort. The extra studies are a help in the regular studies. A child who is studying Latin or German or French is in a very real sense studying English too; his mastery of English is made easier, not harder, by his study of the foreign language side by side with his English. In early years, also, one can most easily master the elements of a foreign language.

"In preparatory classes a one-session day is held, from 9 a.m. to 2 p.m. High-school hours are observed on account of the distance of the preparatory centers from many of the homes. Since little study time can be had in school, pupils who enter these classes need to devote not less than two hours each day to home preparation of lessons."[16]

Two preparatory centers similar to those in Baltimore were established in Indianapolis in 1908. These were also organized upon the departmental plan and were open to pupils ready for the seventh grade. Their membership was limited to twenty-five, and a half year of high-school work was gained.[17] At present (1917) there is only one such special class in the city. This is formed from children selected from the 'A' classes of the seventh grade, and its members finish the remaining year and a half of elementary-school work in a year, at the same time doing enough work in Latin and algebra to secure half a year of high-school credit. They are consequently able to enter the high school with a saving of a year's time, one half of which has been gained from the grades, and the other half from the high school.[18]

In Cincinnati, in September, 1910, a class for superior children was organized in the Eleventh District School, with the design that each member be permitted to pursue his own course, under proper guidance, without regard to the progress of his companions, and with the expectation that it might be possible to accomplish much more than an ordinary year's work. For this class, 32 pupils were selected

[16] Superintendent C. J. Koch. *Preparatory Class Circular*, January 14, 1916.

[17] Kendall, C. N. What modifications are necessary to secure suitable recognition for pupils of varying ability, particularly the ablest? *Proc. Nat. Educ. Assoc.*, 1908, pp. 147–152.

[18] Letter from Supervising Principal Lizzie J. Stearns, School Thirty-two, Indianapolis.

on the basis of the judgment of the teachers with whom they had worked. Seventeen of them were ready for the fifth grade, nine for the fourth, and the remaining were unclassified. Of these 32 pupils, 25 succeeded in doing two years' work in one, and thus gained a whole year.[19] Although Cincinnati provided no special classes for gifted children for some years after the initial experiment, it has lately been definitely decided to institute such classes; teachers have been appointed, and the director of the psychological laboratory has been given the work of testing the children who are recommended as possible members.[20]

In the same year and month in which Cincinnati established its "superior" class, Harrisburg, Pennsylvania, made provision for exceptionally gifted children by establishing special schools exclusively for their instruction. Two such schools were maintained during the year 1910–1911, and this number was increased to three in the fall of 1911. Each of the latter contained about 30 pupils selected from those who were ready to enter the eighth grade, and these pupils covered the work of the eighth and ninth grades in one year, thus saving a year's time in the elementary-school course, which at that time was nine years in length.[21] Harrisburg, however, has since changed from nine to eight elementary grades, and because of the congestion thereby caused, the special schools were abandoned.[22]

The first "rapid-advancement class" in Boston was established January 3, 1913, at the Lewis School. Thirty of the brightest children of the fifth and sixth grades, 15 from each grade, were selected and placed under the control of one teacher, with whom they remained until they were graduated from the elementary school. The upper division of this class graduated in June, 1914, having completed the sixth, seventh, and eighth grades in one and a half years, or in half of the regular time. The lower division graduated a year earlier than it would have under ordinary circumstances. The

[19] Unrich, Flora. A year's work in a "superior" class. *Psychological Clinic*, 5: January, 1912, 245–250.

[20] Letter from Doctor Helen T. Woolley, 1917.

[21] Harrisburg Public Schools, Harrisburg, Pennsylvania, *Report*, 1912. Also Downes, F. E. Seven years with unusually gifted pupils, *Psychological Clinic*, 6: March, 1912, 13–17.

[22] Letter from Superintendent F. E. Downes.

second class of the kind was organized at the Oliver Wendell Holmes School, in March, 1913. It contained 30 pupils, 20 boys and 10 girls, selected from the ablest pupils of the seven sixth grades in the district.[23] In 1914, there were five of these classes.[24] In 1917 there were in full operation in Boston 13 rapid-advancement classes, formed for the express purpose of giving the bright, intelligent, ambitious, healthy pupils a chance to obtain three years' work in two. A class is formed as follows: The principal of a populous district canvasses with the prospective teacher of the rapid-advancement class, the pupils who have received promotion into the sixth grade. From perhaps six classes he selects 30 of the most promising children, pupils whose marks have been the best up through the grades, whose health is certified to by the school attendant physician, and who are recommended by their respective teachers for the rapid-advancement class. These pupils furnish the rapid-advancement teacher with a letter from their parents, signifying their permission and wish that the pupils should be admitted to the advanced class.[25]

In Louisville, Kentucky, an opportunity class for accelerated children formed in September, 1914, made it possible for gifted pupils to accomplish two years' work in one.[26] Louisville, in 1917, when visited by the writer, had two special classes for bright children, but they differed from one another both in organization and in purpose. One of them, located at the Sixth Street School, contained about 40 pupils in Grades 4A and 4B. These children were drawn from several schools in the district, and remained in the class but half a year. The aim of this class was to gain half a year in the elementary course, by covering the work of a whole year during the half year spent in this "accelerated class," as it was called. After having done this, the pupils were returned to their own schools and entered upon the next year's work. The room contained a few pupils who were over-age, because of entering school late, of losing time by sickness or moving, or similar reasons—in other words, pupils who, although chronologically retarded, are not to be classed as dull.

[23] *School Document No. 10, 1913, Boston Public Schools.*

[24] *School Document No. 11, 1914, Boston Public Schools.*

[25] Letter from Assistant Superintendent A. L. Rafter.

[26] Louisville, Kentucky, *Fifth Report of the Board of Education*, 1915–1916, p. 32.

The other class, known as the "opportunity class," was located at the Louisville Normal School, and contained ten boys and ten girls, most of whom were in the 4B grade, although there were one or two especially bright children from the second and third grades. A much more careful selection had been made for this class than for the other, in that all pupils who were considered as fit for enrollment in it were tested with the Stanford Revision of the Binet-Simon Scale by the Director of the Psychological Laboratory, and none with an intelligence quotient less than 120 was accepted. The primary aim in this room was not to gain time, though it turned out that progress more rapid than normal was made, but rather to furnish an abundance of cultural material and to give the pupils a greatly enriched course. In addition to the regular subjects of the fourth grade they were given instruction in German, which was taught entirely by the conversational method. The classroom was very well furnished with desks of the movable chair type, large, round, low tables and small chairs, a piano, a Victrola, and a good assortment of pictures. The class was at the start placed in charge of the teacher of methods in the normal school, assisted by one of the normal-school cadets. It was organized about February 1st, 1917.[27]

In September, 1914, the 55 most capable students in the seventh and eighth grades of the schools of Lead, South Dakota, were segregated into two special rooms as an experiment. The rate of progress was observed, and it was soon concluded that they could do three semesters of work in two semesters of time. This they all accomplished, and when in September, 1915, their work was compared with the students who had gone at the normal rate, the rapid group received a higher grade than the normal group. In 1915–16, two rooms were organized for the most capable students of the third and fourth grades, and they, too, made three semesters of work in one school year. The next year there were three capable groups; (1) a class of 15 beginners, (2) a class of 16 in Grade 2A, and (3) a class of 15 in Grade 4A. Of these three groups, the first was coached by the principal and the latter two by the regular teachers, who also had student assistants. It is the policy in Lead that whenever and

[27] Since this was written an account of the work of this class has been prepared by Miss Race, who gave the Binet examinations. See Henrietta Race. A study of a class of children of superior intelligence, *Jour. of Educ. Psych.*, 9: Feb. 1918, 91–98.

wherever such a group of capable students can be formed, they are segregated under the care of especially strong teachers, in order that they may have the opportunity of making faster progress than they otherwise would.[28]

In 1914, in the Franklin School, Framingham, Massachusetts, 36 pupils, selected for their scholarship and comprising the upper third of the sixth-grade pupils in that school, were formed into a special rapid-advancement class. The same teacher stayed with the group for two years, and at the end of that time they had completed the work of the sixth and seventh grades and more than two-thirds of the work of the eighth grade. In September, 1916, these pupils were promoted to the ninth grade and enrolled in the various rooms of that grade, where they did work of a character far above the average of the class.[29]

In the Central Intermediate School, of Jacksonville, Illinois, which is a departmental school given over to the seventh and eighth grades, each grade is sectioned according to ability, so that the upper section in each grade comprises a group of exceptionally strong pupils. No attempt is made, however, to gain time for these upper sections, although a different grade of work is done, so that the difference is one of quality rather than of quantity.[30] An exactly similar arrangement obtains at Lincoln, Illinois, and in the Central School at Champaign, Illinois, although in the latter instance the school is not upon a departmental basis. At Lincoln, it has been definitely planned to select from the sixth grade a class with the intention of doing three years' work in two.[31] In the Thornburn Departmental School, of Urbana, Illinois, which includes pupils of the seventh and eighth grades, special classes are formed from the upper sixth of the pupils in each grade, and these two classes prepare to enter the high school in a year and a half, instead of the customary two years. Up to the present time, two such accelerated classes have been received into the high school, and their high-school work has been fully up to the standard in every way.

[28] Letter from Superintendent Theodore Saam.

[29] Letter from Superintendent E. W. Fellows.

[30] Letter from Superintendent H. A. Perrin.

[31] Letter from Superintendent William Hawkes.

An interesting method of assisting the progress of bright children is reported from Rockford, Illinois. The Jackson School of that city has departmental work in the fifth to the eighth grade, inclusive. The staff includes a special teacher, who is in charge of a room to which the very bright pupils go for recitation. At the end of March, 1917, 47 pupils had been assigned to this teacher since the first of the preceding February. These pupils recited once a week in each study, such as language, geography, history, arithmetic, etc., but they had a lesson assigned daily for study in each subject. On Monday the teacher covered the ground of the five days' language study. On Tuesday the five days' work in geography is gone over, and so on. Besides this, the pupils did the daily work of the class above to which they had been promoted, thus doing a year's work in a half year.[32] It will be seen that, in effect, this scheme is a form of the special-promotion plan, modified to make definite provision for regular class recitations upon the work that has been skipped on account of promotion to the next class.

A number of cities are providing ungraded or "mixed" rooms, in which are placed such children as are "misfits," either on account of inability to keep up with the work of their grade or of ability to do more work. Wausau, Wisconsin, has two such rooms, advantageously located, each with an enrollment that, if possible, is not allowed to exceed 15 pupils. Three types of pupils are transferred to these rooms: (1) especially strong pupils who desire to make an additional year or half year in the course, (2) pupils who have been absent for any cause and need to make up the work which they have missed, and (3) pupils who are dull or slow in any study and need help to make up their deficiencies in that branch and so keep up with their grades. The instruction in these rooms is all individual, and pupils stay in them only so long as is necessary to accomplish the purpose for which they came.[33] Similar rooms are maintained in Durham, North Carolina.[34] Concord, Massachusetts, has nine "opportunity classes," as they are called there, each of which is for both bright children and those who must go more slowly than the normal. All grades are more or less represented in them, according to the demands

[32] Letter from Principal Mary C. Foote.
[33] Letter from Superintendent S. B. Foley.
[34] Letter from Superintendent Edwin D. Pusey.

and needs, and, since the pupils in them are usually somewhere between grades in their attainments, these classes might be called "half-sizes." It has been found in Concord that by this method some pupils can do two grades in one year, and many more can do three grades in two years. From the sixth to the seventh grades only a few pupils can gain more than a grade, and below the fourth few can gain two grades in one year. These children are so graded that the teacher is able to carry them along more rapidly and in the course of a year may have brought them to the point where through individual work, under the Batavia System, the teacher of the next higher grade may pull them up to her grade, so that in these ways they will have gained a grade in the course of two years.[35]

While we have not much information concerning special classes for gifted children in Europe, a few cases have been reported. In 1899, Dr. Sickinger, superintendent of the schools of Mannheim, introduced a classification of the pupils of the *Volksschule* according to their abilities, and organized a system of special classes parallel to the regular ones. These special classes, or so-called "furthering classes," were designed to meet the needs of those children who, while not to be classed as mentally defective, were unable to do the work of the regular classes. Sickinger's original scheme of classification was a three-fold one which separated the mentally defective and the slow from the normal, but made no special provision for the exceptionally capable.[36] In 1909, however, the educational authorities of Mannheim arranged for special foreign-language classes, in which instruction in French should be given to pupils of the upper grades of the *Volksschule* who had demonstrated by their industry and by the quality of their work that they were fitted for the extra study. In accordance with this plan, pupils of the fourth grade that had received good reports throughout their course might be assigned to a preliminary language course at the end of the fourth year, and at the close of this one-year preliminary course, those that had made good progress in their regular work, as well as in this special language

[35] Letter from Superintendent W. A. Hall.

[36] Maennel, B. *The Auxiliary Schools of Germany*. Translated by F. B. Dresslar as *United States Bureau of Education Bulletin* 1907, Number 3, pp. 43–47.

Rathmann, C. G. The Mannheim system of school organization. *Educational Review*, 53: January, 1917, 55–60.

work, and had been honorably mentioned in the matter of attainment, industry, and conduct, were admitted to the regular foreign-language classes, from which they might be dropped at any time if their work failed to come up to the standard. The Mannheim system of school organization was also in use in Charlottenburg, where the classification was carried a step further than at Mannheim, so that the very bright were segregated, instead of being left in the same division with the children of normal or average ability.[37]

In the Southall Street Elementary School, Manchester, England, there has been in use for some time a very effective combination of flexible grading and special classes for bright children, which deserves notice as a plan that is both practical and easy of administration, and might well be introduced into other schools. In this school, which enrolls about 800 pupils, the 30 brightest children coming up from the kindergarten at the beginning of each year are placed in a special class, known as Special II, to do Grades I and II in one year. The rest of the beginners are enrolled in three groups—good, medium, and weak, with chances for transfer upward. At the end of the year, the pupils in Special II are promoted to the regular third grade, where they have a comparatively easy time for a year. A few of them who are exceptionally able, however, go to Special IV, there to do Grades III and IV in the next year. Of the pupils who do their first year's work in the regular first grade, a few of the best receive promotion into Special III, where the work of Grades II and III is done in one year. In other words, whenever it is possible, it is arranged that supernormal pupils are promoted to a special class where they will gain a grade by doing two years' work in one. The typical group of accelerates begins its school progress in Grade Special II, is promoted to Grade III and then to Special V, where it does the work of Grades IV and V in one year. The promotion from Special V is to Grade VI, which is followed by Grade VII; and, as a result of this arrangement, the seven years' work is done in five. When there are not enough bright pupils to form a special class, they are allowed to skip a grade and go to the one beyond, receiving, if necessary, special help in making up any part of the course that has been missed. In all, four methods of promotion are used: (1) promotion at the end

[37] Holmes, W. H. *School Organization and the Individual Child*, pp. 61, 135–137.

of the school year by the formation of a special class to work through two grades in one year; (2) promotion at the end of a year by skipping a grade; (3) promotion after the term examinations; and (4) promotion at any time. Sometimes, besides this, at the end of the half year, the pupils in each of the first four grades are divided into two sections, and the pupils in the upper section go ahead as fast as possible, in order to get as much of the work of the next grade done as they can.[38]

[38] Shaer, I. Special classes for bright children in an English elementary school. *Journ. of Educ. Psych.*, 4: April, 1913, 209–222.

CHAPTER III

THE EXPERIMENTAL ROOM AT URBANA

In September, 1916, the General Education Board placed in the thanks of Professor Guy M. Whipple, then of the Department of Education of the University of Illinois, a sum of money to be expended in the study of certain problems connected with the education of gifted children. A part of this fund was devoted to the subsidizing of a special room for bright children, which, through the courtesy of the Board of Education of the city of Urbana and the cooperation of Superintendent A. P. Johnson, was established in the Leal School of that city. It was understood that the pupils of this room should follow the regular course of study, use the same textbooks, and be held to the same requirements as the other pupils in the corresponding grades. It was not the purpose of those having the experiment in charge to crowd the children in an attempt to see how much ground they could possibly cover, but to give them opportunity to work up to their natural pace, to keep them busy enough so that they might not form habits of lazy and careless work, and to adapt the instruction to the distinctive capabilities and needs of the individual pupils.

The School

The Leal school, in which the special room was located, is the largest elementary school in the city of Urbana. It enrolls some 400 pupils, in 12 rooms, limited to the first six grades. The teaching force consists of eleven room-teachers and a principal, whose time, however, is practically all spent in teaching. The district served by the school is a rather large one, and includes most of the University residence district as well as a representative portion of the residence district of the city itself. The building is not modern in type, and cannot be said to be above the average of school buildings in towns of this size.

Physical Equipment of the Room

Owing to various delays in securing the furniture for the room, it did not go into operation until October 2, 1916, three weeks after the other rooms had begun work. The physical condition of the room was not better than average. It was furnished with the ordinary non-adjustable school desks, had no more furniture or pictures than the other rooms in the building, and was no better equipped with books, maps, globes, or similar educational apparatus. Because of our desire to carry on the experiment under average conditions, things were left much as they were, with only a few exceptions. Since the room was inadequately lighted from the north and west, with the north light at the pupils' left, the Venetian blinds which were at the windows were removed completely. The walls and ceiling were repainted a light buff to replace the dingy and too absorptive tones, and the blackboards were resurfaced to remove the gloss.

The Teacher

The teacher in charge of the room was chosen by the city superintendent and was serving her first year in the system. Her preparation was above that of the average grade teacher, for she was a graduate of one of the best normal schools in the country, located in a western state, and also a graduate of the state university of the same state. Not including this year, she had had three years of experience in teaching in the middle and upper elementary grades, in addition to the practice teaching which she did in the normal school. During the month of November, 1916, her work was observed and her efficiency rated by two members of the Department of Education of the University of Illinois and a prominent superintendent of schools. In each case her teaching efficiency was rated as average, or a trifle above average. In scholarship, sincerity, and integrity of purpose she ranked high, but was lacking in resourcefulness and initiative. The chief hindrances to her work during the year, considered from the standpoint of the qualities needed in carrying on the work of such a room, were not matters of scholarship, but of personality, and her greatest deficiency in this respect was lack of that animation, enthusiasm, and initiative which would inspire children to engage their full powers in their work. In addition to the regular teacher, the special teachers of music and of drawing worked in the room at

regular intervals, just as they did in the other rooms of the building. It needs to be noted quite clearly that all of the conditions of the experiment which have thus far been mentioned are *average* conditions. Supervision, course of study, physical equipment of room and of building, instruction—none of these could be said to be above average. The only really distinctive factor in our experiment, then, consisted in the superior intelligence of the children who made up the enrollment of the room.

Selection of the Pupils

The selection of the children was made by the principal of the school, in consultation with the teachers, upon the basis of the records made by the children in their school work, their health, industry, and application. Fifteen pupils were selected from all those of the school who had at the close of the last year received promotion to the fifth grade, and an equal number from those who were ready to enter the sixth grade. One or two children who were selected did not accept, because of fear of extra work or dislike of being separated from friends in other rooms, and others were chosen to fill their places. Of these others, one sixth-grade boy was transferred from another school. As organized, then, the room consisted of 30 pupils, 15 in the fifth grade and 15 in the sixth, representing practically the top fifth of the enrollment in each of these two grades in the Leal School. The children, upon being assembled for the first time, were simply told that they were to be given an opportunity to see what they could do, not that they were expected to cover any definite amount of work.

Composition of the Control Group

In addition to the 30 5th and 6th grade pupils in the special room, there were in the Leal School 57 5th grade and 62 6th grade pupils. These were enrolled in three different rooms, which served as control groups for evaluating the results of the various educational and psychological tests which were used to discover some of the differences between bright and ordinary pupils. These rooms also made possible a check upon progress and attendance. Forty-three 6th grade pupils were enrolled in one room, which will be hereafter designated as Room 6G. A 5th grade room contained 38 pupils and will

be known as Room 5Y. The third room was a mixed room, containing 19 5th-grade and an equal number of 6th grade pupils. It will be called Room 5-6F.

Personal Data of the Experimental Group

The following table displays the more important personal facts concerning each pupil.

TABLE I

Sex, Age, and Parental Occupation of Pupils of Experimental Group

Grade	Number	Sex	Age* in Years	Age* in Months	Age* in Days	Occupation of Parent
V.	1	Girl	10	3	12	Editor
	2	Girl	10	2	4	Jeweler
	3	Girl	10	6	24	Faculty, U. of Ill.
	4	Boy	11	2	8	Policeman
	5	Girl	10	9	19	Physician
	6	Girl	10	8	9	Barber
	7	Girl	10	5	30	Clerk
	8	Boy	10	5	23	Clergyman
	9	Girl	11	3	24	Clerk
	10	Girl	10	0	1	Faculty, U. of Ill.
	11	Girl	10	5	25	Seamstress
	12	Boy	11	3	12	Painter
	13	Girl	10	3	7	Clerk
	14	Boy	10	5	27	Banker
	15	Boy	11	0	8	Faculty, U. of Ill.
VI.	16	Boy	10	6	10	Helper, Univ. Farm
	17	Boy	12	4	15	Plasterer
	18	Girl	11	10	11	Merchant
	19	Girl	11	4	6	Druggist
	20	Boy	11	6	4	Clerk
	21	Girl	12	5	11	Faculty, U. of Ill.
	22	Boy	11	9	23	Laundress
	23	Girl	9	9	30	Faculty, U. of Ill.
	24	Boy	11	9	16	Mechanic
	25	Girl	11	7	12	Faculty, U. of Ill.
	26	Boy	10	9	17	Conductor
	27	Girl	11	7	19	Faculty, U. of Ill.
	28	Girl	11	1	5	Mail carrier
	29	Boy	11	3	7	Carpenter
	30	Boy	12	4	9	Merchant

* All ages have been computed as at December 31, 1916.

There are five boys and ten girls in the 5th, eight boys and seven girls in the 6th grade. The median age of the 5th grade on December 31, 1916, was ten years, five months, and thirty days, or practically ten and one-half years, as against a median age on the same date,

for the other 57 5th grade pupils in the building, of ten years and eight months—a difference of two months in favor of the experimental group. For the 6th grade, the median age is eleven years, seven months, and twelve days, in the experimental group, and twelve years for the 62 6th-grade pupils in other rooms—a difference of four and one-half months, or two and a half months greater than the difference in the 5th grade.

In order to determine whether the experimental room contained more than its share of the children of faculty members enrolled in these grades, a rather arbitrary grouping of the different parental occupations and professions represented was made, and the percentage figured for each group, first for the total membership of the 5th and 6th grades, before the pupils of the experimental room were separated from the rest, and again for the membership of the special room. The conditions are shown by the following table.

TABLE II

Percentage by Occupations, Total and Experimental Groups

Occupations and Professions	Per cent for all 5th and 6th grade pupils combined	Per cent for experimental group
Skilled laborers and tradesmen	31.91	26.67
Faculty members	17.02	23.33
Clerks, salesmen and solicitors	11.35	13.33
Police, firemen, mail-carriers, motormen and conductors	10.64	10.00
Farmers and dairymen	7.80	0.00
Bankers and merchants	6.38	10.00
Unskilled laborers	4.96	0.00
Laundresses, seamstresses and domestics	3.55	6.67
Editors, clergymen, lawyers and physicians	3.55	10.00
Contractors	2.84	0.00

It is here shown that the children from faculty homes furnished somewhat more than their share of the experimental group, since 17 per cent of the total membership of the two grades has supplied 23⅓ per cent of the enrollment of the special room. Again, if to these there are added those children who come from homes representing the other professions, we find that a few more than one-fifth of the total group furnish exactly one-third of the selected upper group.

While this is not sufficient ground for generalization, it is true that under the conditions of this experiment, children from homes representing the so-called learned professions stand a better chance of high rank in school success, as measured by the ordinary methods.

School History

The school progress of most of these children, prior to their enrollment in the experimental room, had been entirely normal; most of them began school at six years of age, or thereabouts, and, with a few exceptions, made a school grade each year after. Only one case of repeating a grade was reported, namely, Number 4, who spent two years in the first grade. Numbers 16 and 26 skipped the third grade, and Numbers 8 and 23 entered the public schools in the third grade, for the former did the work of the first two years at home, and the latter had attended a private school. Number 5 did the work of the first two grades in one year, Number 10 spent only one half-year in the first grade, Number 6 lost half of the second year's work, because of illness, and for that reason has been in school one-half year longer than the normal number of years for reaching the fifth grade; Number 7 missed about half the first year, for the same reason, but did not spend any time in making it up, and hence was not delayed in her progress. Attention should be called to the fact that, measured in terms of time spent in school, but few of these children have derived any advantage from the excellent character of their work, for in only four or five cases has the school made any provision whereby progress more rapid than that of the average child might be made possible for them.

Mental Age

In order to determine the degree of intelligence possessed by each of the members of the experimental group, early in the year they were tested by Miss Coy by the Stanford Revision of the Binet-Simon scale for the Measurement of Intelligence.[1] The results are exhibited in Table III.

[1] Terman, L. M. *The Measurement of Intelligence.*

TABLE III

Mental Age, Advancement, and Intelligence Quotient

Grade	No. Sex	Date of Examination	Chronological Age* Yrs.	Mos.	Mental Age Yrs.	Mos.	Advancement Yrs.	Mos.	Intelligence Quotient
V.	1. Girl	Oct. 16	10	1	13	11	3	10	138.0
	2. Girl	Oct. 12	10	0	14	8	4	8	146.6
	3. Girl	Sept. 29	10	3	11	3	1	0	110.0
	4. Boy	Oct. 18	11	0	11	2		2	101.5
	5. Girl	Oct. 16	10	7	11	3		8	107.0
	6. Girl	Oct. 2	10	5	13	2	2	9	126.4
	7. Girl	Oct. 13	10	3	11	10	1	7	115.4
	8. Boy	Oct. 17	10	3	12	7	2	4	122.7
	9. Girl	Oct. 23	11	1	12	0		11	108.2
	10. Girl	Oct. 20	9	10	11	7	1	9	117.9
	11. Girl	Oct. 13	10	3	14	6	4	3	141.4
	12. Boy	Oct. 17	11	1	13	5	2	4	121.0
	13. Girl	Oct. 11	10	1	10	3		2	101.6
	14. Boy	Oct. 24	10	3	13	5	3	2	130.9
	15. Boy	Oct. 5	10	10	11	11	1	1	110.0
VI.	16. Boy	Oct. 4	10	4	13	9	3	5	133.0
	17. Boy	Sept. 28	12	1	14	9	2	8	122.0
	18. Girl	Oct. 6	11	7	12	5		10	107.0
	19. Girl	Oct. 3	11	2	13	11	2	9	124.6
	20. Boy	Oct. 6	11	4	11	9		5	103.6
	21. Girl	Sept. 29	12	3	13	1		10	107.0
	22. Boy	Oct. 4	11	7	12	6		11	108.0
	23. Girl	Oct. 2	9	7	12	9	3	2	133.0
	24. Boy	Oct. 9	11	7	11	6		1	99.3
	25. Girl	Sept. 28	11	4	12	5	1	1	110.0
	26. Boy	Oct. 9	10	7	12	7	2	0	118.8
	27. Girl	Sept. 28	11	4	12	10	1	6	113.0
	28. Girl	Oct. 10	10	10	12	6	1	8	115.3
	29. Boy	Oct. 3	11	0	12	2	1	2	110.6
	30. Boy	Oct. 10	12	1	16	1	4	0	134.4

* The chronological age has in each case been calculated to the nearest full month.

By the intelligence quotient (I.Q) is meant the ratio between the mental age of the child, as determined by the Binet scale, and the chronological age. It is found by dividing the mental age by the chronological age. Terman classifies intelligence quotients above 140 as representing "near" genius or genius; those from 120 to 140 as degrees of very superior intelligence; from 110 to 120 as superior intelligence; and from 90 to 110 as normal, or average intelligence. It must be remembered, however, that on account of the impossibility

of drawing sharp border-lines these classifications are only approximate.[2] The following table distributes the intelligence quotients shown in the table above into these groups.

TABLE IV

Distribution by Intelligence Groups

	Fifth Grade	Sixth Grade	Total
Normal, or average intelligence............	6	6	12
Superior intelligence......................	2	4	6
Very superior intelligence.................	5	5	10
Near genius or genius......................	2	0	2

To put the matter in another way, an I. Q. of 110 is equaled or excelled by 20 children out of 100; an I. Q. of 115 by ten out of 100, an I. Q. of 125 by one out of 100, while only about one child in 250 or 300 tests as high as 140.[3] The number of children in the experimental room who reached each of these points is shown in Table V.

TABLE V

Number of Pupils Reaching Higher Intelligence Quotients

I. Q. Reached or Exceeded	Fifth Grade	Sixth Grade	Total	Part of Total School Population Normally Represented
110	10	10	20	Upper 20%
115	8	7	15	Upper 10%
120	7	5	12	Upper 5%
125	5	3	8	Upper 3%
130	4	3	7	Upper 1%
140	2	0	2	Upper 0.3%

It has been suggested that the intelligence standard for admission to a special class for gifted children be set at a mental advancement of two whole years,[4] which, at the age of most of the children in this class, would result in an intelligence quotient of about 120, which Terman makes the dividing line between "superior" and "very superior" intelligence. There are 13 children in the class who show a

[2] Terman, L. M. *Op. cit.*, p. 79.

[3] Terman, L. M. *Op. cit.*, pp. 78, 96.

[4] Hoke, K. J. The Public Schools and the Abnormal Child. *Psychological Clinic*, 9: January, 1916, 238–245.

Goddard, H. H. Two thousand normal children measured by the Binet measuring scale of intelligence. *Pedagogical Seminary* 18: June, 1911, 232–259.

mental advancement of two years or more, and 12 who have an intelligence quotient of 120 or better (Table V). Of these 12, it is interesting to note that four come from the homes of skilled laborers and tradesmen, four are children of bankers or merchants, one comes from the home of a faculty member, two from homes representing other professions, and one from the home of a seamstress. Seven children of faculty members, in the whole group, contribute only one intelligence quotient above 120, although only two of them fall below 110.

Criticism of the Method of Selection

The basis of selection of the pupils of the experimental room and the manner in which that selection was made have been described in an earlier portion of the present chapter. It will be remembered that the room, as actually constituted, received the upper 20 per cent each of the fifth and sixth grades of the Leal School, and that the selection was made entirely upon the opinions of the principal and the teachers, whose judgment, naturally enough, was based largely upon the school records of the individual pupils. It will be seen, however, that in our experimental class we have a very liberal selection, with a consequently wide range of intelligence quotients. Only 12 of the 30 children reach or exceed an I. Q. which entitles them to be classed as possessing "very superior" intelligence, and ten of them are of no better than average, though many of these latter are near the upper limit of that classification. Had the pupils for this room been chosen by means of the results of the mental tests, therefore, there would have been a much better selection, and even more could have been accomplished than actually was.

The tables in the following chapters, which exhibit the results of the various educational and psychological tests that were used, show a comparatively wide range of ability in each test, even in the selected group. This is owing chiefly to the fact that one or two individuals, whose intelligence quotients are the lowest in the room, are also consistently low in the tests. A better method of selection would have eliminated these pupils and thus made possible more uniform results. Our experience throughout the year indicated very strongly that the selection of pupils for a special room for gifted children should be made by means of psychological tests, rather than

being allowed to depend upon the opinions of teachers and principals, or even upon the record of the teachers' marks secured by the child in the various school subjects.[5]

Amount of Work Accomplished

An important part of the experiment consisted in keeping a close comparison of the progress of the special room with that of the other rooms of the same grade. It will be remembered that the special room was not established until October 2nd, or three weeks after the work of the school year had begun. During those three weeks the pupils who had been selected, carried on their work in the regular rooms with the rest of the class, and in that way, from the point of view of the experimental work, some time was lost. At the end of November, that is to say, in eight weeks, a careful account was taken of the work which had been done in the different rooms, and it was found that the special 5th grade group had accomplished approximately 50 per cent more work than the regular 5th grades had done in arithmetic, 100 per cent more in language, and 50 per cent more in geography. The 6th grade, in amount of work done, had made a gain of approximately 75 per cent in arithmetic and 66 per cent in language. Besides this, both grades in the room had finished the half-year's work in physiology prescribed by the course of study, and had begun upon the work in history which regularly follows the completion of the work in physiology, as the course is arranged. Final examinations in arithmetic, set by the city superintendent and covering the work of a whole school year for each grade, *i.e.*, those regularly given in June, were given to both grades on February 9, 1917, and the corresponding examinations in language were given one week later. The 5th grade took the final examination in geography on February 19. All these examinations were under the supervision of the superintendent, and the papers, after having been graded by the teacher, were sent to his office for inspection and approval. In each case the results were satisfactory, and the classes were allowed to go on at once with the work of the next year in the respective branches. The Urbana course of study provides for only two months' work in geography for the 6th grade, beginning

[5] For an extended discussion of this matter, see G. M. Whipple, *Classes for Gifted Children*, Bloomington, Ill., 1919.

April first. With this 6th grade, however, the work was begun after the Christmas vacation and was completed by the end of February, at which time the 7th grade work in the same subject was undertaken. At the end of the school year both grades had completed another year of work, with the exception of the work in history, in which, for various reasons, mainly because of difficulty in articulating the work of the Special Room with the course of study used in the Urbana school system, as required by the superintendent, and therefore beyond our control, they still lacked a few weeks' work. During the first week in June, 1917, the children of the Special Group were given the regular final examinations in the subjects of the 6th and 7th grades as outlined for the other rooms, with the understanding that if these examinations were passed, and the deficiencies in history made up during the summer months, or in the following year, they would be permitted to enter the grade ahead at the beginning of the next school year, in this way making a gain of one year. Nine pupils of the Special Fifth, and eight of the Special Sixth passed the examinations and received certificates of promotion. A number of the children failed in the examination in arithmetic, the papers from which were scored by the superintendent himself, and that in a very rigorous way. Almost all the members of this latter group did review work in arithmetic during the summer and passed a special examination set for them in September, thus gaining promotion. It should be noted, in this connection, that the matter of the promotion of the pupils of the Special Group rested entirely with the decision of the superintendent.[6] In addition, it may be said that practically all of those who failed to receive promotion either in June or in September would never had been admitted to the Special Group if the selection had been made by the use of our psychological tests, rather than upon the single basis of teachers' judgments.

Health

The extra amount of work which the pupils carried resulted in no case in any impairment of health. Careful watch was kept for any symptoms of nerve strain, or any other indications of weakness, but nothing of the sort was detected. Two children put on eye-

[6] For a detailed account of this phase of the investigation, see Whipple, *op. cit.*, pp. 83–93

glasses early in the year, and in consequence of advice given them as the result of tests of vision, rather than because of any extra strain. Careful inspection was made of the children's teeth by a competent dentist, and a copy of his report transmitted to the parents.

Attendance

In regularity of attendance, the experimental room surpassed the other rooms of the same grade which were in the building. Table VI shows the per cent of attendance for all rooms in the Leal School enrolling 5th and 6th grade pupils, by months from October, 1916, to March, 1917, inclusive. September, 1916, is omitted for the reason that the special room was not in existence during that month.

TABLE VI

Per Cent of Attendance by Months

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Average
Room 5Y.........	97.5	95.5	96.8	93.8	93.1	95.3	95.83
Room 5–6F.......	98.3	96.7	96.2	96.5	94.1	94.6	96.07
Room 6G.........	98.9	97.5	96.3	96.3	96.7	97.6	97.19
Experimental Room	99.1	98.7	99.7	98.8	99.0	99.1	99.07

Atmosphere

The 'atmosphere' of the room throughout the whole year was entirely normal. Although it is sometimes urged as an argument against the establishment of special rooms for gifted children that there is danger of the development of egotism, clannishness, or similar undesirable characteristics on the part of children placed in such rooms, the pupils under observation did not exhibit any inordinate amount of any such traits. They enjoy the opportunity of using their powers, and such was their industry and their interest in their work that discipline was reduced to a minimum, and the teacher left free to spend all her energies in the work of instruction.

Summary

In summary of this chapter it may be said that, in so far as the conditions of the experiment may be considered as typical, children from the top fifth of the 5th and 6th grades of the elementary school, selected, in general, on the basis of the ordinary tests of school work, are in median age from two to six months younger than the

children composing the remaining four-fifths. They are somewhat more likely to come from the homes of professional fathers than from the homes of skilled or unskilled laborers. But few of them derive any advantage, in terms of school progress, from the excellence of their work, although from one-third to one-half of them are advanced in mental age two years beyond their chronological age, and possess a degree of intelligence enabling them to be classed intellectually as "very superior." Children falling within this latter group, which includes practically the top ten per cent, are able to do approximately two years of the work outlined in the ordinary course of study for the middle- and lower-grammar grades in one year, with a degree of excellence fully up to the standard, and without any undue strain or impairment of health. They excel ordinary children in regularity of attendance, are not abnormally clannish or selfish, are industrious and cause practically no trouble in discipline.

CHAPTER IV

RESULTS OF THE EDUCATIONAL TESTS

In order to determine the efficiency in the fundamental branches of the special room as a whole, as well as to ascertain the points of strength or weakness in each pupil individually, throughout the year use was made of the various educational scales and tests for ability in handwriting, spelling, arithmetic, and composition; while other tests, not quite so closely connected with some particular branch, were used to test different types of language ability. It was possible, by comparing the results of these tests with the norms established for them, to determine what degree of efficiency the room had attained. In some instances these tests were given to the other rooms in the building which were cited in the previous chapter as "control groups,"[1] and this made possible a direct comparison of the efficiency of the special room with that of the rest of the school. We shall proceed at once to set forth the results of these tests for the various studies.

Handwriting

To determine the quality of handwriting, samples were secured in the experimental room on October third, the second day the room was in session. These samples were scored on both the Ayres[2] and the Thorndike scales[3] for the measurement of ability in handwriting, by sixteen graduate students in education. Table VII shows the median and the average amalgamated score on each scale for each grade. It also shows the range of the median score for each grade among the sixteen persons who did the scoring. The samples were scored for quality only; no account was taken of speed.

[1] See Chapter III.

[2] Ayres, L. P. *A Scale for Measuring the Quality of Handwriting of School Children.*

[3] Thorndike, E. L. *A Scale for Handwriting of Children in Grades 5 to 8.*

Thorndike, E. L. The measurement of the quality of handwriting. *Teachers College Record,* 11: March, 1910, 83–175.

TABLE VII

Quality of Handwriting Produced by Pupils of Special Room, October 3, 1916. Ayres and Thorndike Scales, 16 Judges

	FIFTH GRADE		SIXTH GRADE	
	Thorndike	Ayres	Thorndike	Ayres
Median	9.8	48.6	10.4	49.5
Average	10.0	48.6	10.5	50.8
Median Range	8.5–11.5	36.8–61.8	7.6–12.9	29.7–71.5

Starch's standard scores (Table VIII), are based on over 6,000 pupils in 28 schools, and apply to the ends of the respective years.[4]

TABLE VIII

Quality of Handwriting. Standard Scores for End of Each Grade, Ayres and Thorndike Scales (Starch)

GRADES	4	5	6	7	8
Quality (Thorndike)	8.7	9.3	9.8	10.4	10.9
Quality (Ayres)	37	43	53	57	....

A comparison of Tables VII and VIII shows that, taking the median scores on the Thorndike scale, the fifth grade has attained a quality equal to the standard score at the end of the sixth grade, while the sixth grade has reached the ability to be expected at the end of the seventh grade. Since the samples were taken at the beginning of the year, or only three weeks after the beginning, to be exact, the scores must be considered as representing the ability possessed by these pupils at the end of the fourth and fifth grades. In other words, they must be compared not with the fifth-grade and sixth-grade scores, but with those of a year earlier. Consequently, accepting Starch's scores as the true norms, and considering the judging as efficient, on the basis of the Thorndike scale the median score of each grade is two years ahead of what it might be expected to be. The same statement is true when we use the average instead of the median, for in both grades the average is slightly the higher of the two measures.

[4] Starch, D. *Educational Measurements*, pp. 82–83.

With the Ayres scale, the results are slightly different. The average score for the fifth grade stands just a trifle above the mid-point between the standard scores at the ends of the fifth and sixth grades. If we could assume that the difference between the standard scores for these grades represented ten equal steps on the scale, then our fifth-grade group would fall at a point representing about the middle of the sixth grade, with the sixth-grade group slightly above it. Remembering again that our groups are at the beginning of the year, this calculation would show the fifth-grade group advanced one and one-half years in average score, and the sixth-grade group advanced one-half year. Without going into the argument as to the relative merits of these two scales, it seems safe to assume that the experimental group, in terms of average score, is advanced at least one year in average quality of handwriting.

Spelling

For testing ability in spelling, three of the lists in Ayres's scale for Spelling[5] were used; List N. given on October 2, List R, given October 20, and List U, given October 30. Table IX exhibits the average, the median, and the range of the percentage of words of each list spelled correctly by each of the two grades.

TABLE IX

Percentage of Words Spelled Correctly. Lists N, R, U, Ayres' Spelling Scale

List	Grade	Median	Average	Range
N.	5	92.00	91.52	70.13–98.70
	6	97.52	97.27	92.21–100.0
R.	5	80.80	73.21	25.00–98.21
	6	93.03	91.43	64.29–98.21
U.	5	48.53	50.00	9.67–76.47
	6	75.00	75.29	29.41–97.06

In Table X we have the standard percentages for each list, by grades, from data furnished by Ayres.

[5] Ayres, L. P. *A Measuring Scale for Ability in Spelling.*

TABLE X

Standard Percentages of Words Spelled Correctly by Grades, Lists N, R, U, Ayres' Spelling Scale (After Ayres)

Grade	List N	List R	List U
4	77–81	46–54	.....
5	87–90	63–69	.....
6	94–95	77–81	55–62
7	98	87–90	70–76
8	100	94–95	82–86

Accepting the median as the truer measure of the central tendency, which it probably is in this case (although the difference between median and average assumes importance only with List R, especially in the fifth grade), we have, by combining Tables IX and X, a table which shows us the grade of spelling ability reached by the median score and range of each grade.

TABLE XI

Grade of Spelling Ability Reached or Exceeded by Median and Extreme Scores of Each Grade in Experimental Room. Lists N, R, U, Ayres' Spelling Scale

List	Grade	Grade Reached by Median Score	Grades Reached by Extreme Scores	
			Lowest	Highest
N	5	5.5	3	7
	6	7.0	5	8
R	5	6.00	3	8
	6	7.75	5	8
U	5	*	*	6
	6	7	*	8

* No standards for corresponding scores given in this list.

It will be seen, upon examination of Table XI, that each of the grades in the special room had reached a degree of spelling ability approximately equal to that of the grade above it. The difference is more marked than it appears to be, when we take into consideration the fact that these lists were given at the beginning of the year, and it is, therefore, a very conservative estimate to say that the selected pupils are as a group one year advanced in spelling ability.

With the idea that a more rigorous test of spelling than the Ayres scale should be employed to obtain valid results, the superintendent of schools, during the first week in April, 1917, gave Lists Three and Four of Starch's tests in spelling[6] to all the 5th and 6th-grade pupils in the building. The average percentage of words spelled correctly, by grades and rooms, was as shown in Table XII.

TABLE XII

Percentage of Words Spelled Correctly by Fifth and Sixth Grade Pupils. Starch's Spelling Tests, Lists III and IV

Room and Grade *	Per Cent
5 F	68.13
5 Y	61.50
5 Exp	71.30
6 F	69.68
6 G	72.02
6 Exp	79.05

* It will be noted that this table includes Rooms 5-6 F, 5 Y, and 6 G, which have already been described as forming a control group. See Chapter III.

Starch gives as standards for each grade the percentages indicated in Table XIII.

TABLE XIII

Standard Scores. Starch's Spelling Test

Grades	V	VI	VII	VIII
Percentage of Words Correct	61	71	78	85

By comparing our results with the standard scores, we find that the experimental fifth grade, which at the time of the test, had really become a sixth grade in respect to the work it was doing, was up to the 6th-grade standard in spelling ability. Likewise, the special 6th grade, then virtually doing 7th-grade work, was up to the standard for that grade. Of the control groups, all were up to grade, or better, with the exception of the class designated as 6 F, which was a little below the standard for its grade. The results of the Starch tests, then, corroborated those obtained earlier in the year with the Ayres test and confirmed the assertion of the investigators that the selected pupils, were, as a group, distinctly superior in ability to spell.

ARITHMETIC

Several different methods of testing arithmetical abilities were used during the year. To determine efficiency in the four funda-

[6] Starch, D. *Educational Measurements*, pp. 88–98.

mentals, the Woody Arithmetic Scales, Series A, were used.[7] This series consists of a set of four graded scales, one for each of the fundamental operations. They were given to the pupils of the experimental room on the dates indicated in Table XIV, in the manner prescribed by their author, and the class score in each of the operations was calculated according to his directions. This score represents the degree of difficulty on the scale of that problem which could be solved with absolute accuracy by just 50 per cent of the class.

TABLE XIV

Class Scores, Experimental Room, Woody Arithmetic Scales, Series A

		Fifth Grade	Sixth Grade
Addition	Nov. 7	8.18	8.39
Subtraction	Nov. 10	6.91	7.55
Multiplication	Nov. 13	6.37	7.39
Division	Nov. 14	6.14	7.34

Woody gives the figures shown in Table XV as the tentative standards of achievement in these scales, when the tests are given during the first part of the school year. They are, then, directly comparable with our scores.

TABLE XV

Tentative Standards of Achievement, Woody Arithmetic Scales, Series A

Grade	Addition	Subtraction	Multiplicat'n	Division
V	6.99	5.47	5.53	4.94
VI	7.95	6.46	6.72	5.87
VII	8.65	7.31	7.26	6.59
VIII	9.01	7.64	7.93	7.16

Comparing our class scores with these tentative standards, we find that our fifth grade excels the 6th-grade standard in addition, subtraction, and division, and almost reaches it in multiplication; while our sixth grade, although not quite reaching the 7th-grade standard in addition, goes beyond it in subtraction and multiplication, and excels the 8th-grade standard in division.

As the Woody scales were originally published, they consisted of two series of four scales each, so that each scale tested ability in only one of the fundamentals. A modification of them has since been published, consisting of two sheets of problems, representing

[7] Woody, C. *Measurements of Some Achievements in Arithmetic.* Teachers College, Columbia University Contributions to Education, No. 80, pp. 3–22.

all four of the fundamental operations upon one scale.[8] Since norms for the scales in this form have not yet been published, we gave them not only to the pupils of the experimental room, but also to those other rooms of the same grade in the building that afforded the control group already described. Scale I was given in all the rooms on February 1. Scale II was given to the control rooms on February 9, and to the experimental room on February 12. The results have been scored in two ways: (1) by finding the number of problems correctly solved within the time-limit of 20 minutes, and (2) by computing the time in seconds required for one correct solution. Tables XVI–XIX show these scores for each scale.

TABLE XVI

Woody-McCall Arithmetic Scales, Mixed Fundamentals, B I. Number Correct Solutions in Twenty Minutes

Number Correct	NUMBER OF PUPILS					
	Fifth Grade			Sixth Grade		
	Total	Control	Selected	Total	Control	Selected
14	.....	1	0	.....	0	0
15	.....	0	0	.....	0	0
16	.....	0	0	.....	0	0
17	.....	1	0	.....	1	0
18	.....	2	0	.....	0	0
19	.....	3	0	.....	1	0
20	.....	2	0	.....	1	0
21	.....	3	1	.....	2	0
22	.....	5	0	.....	2	0
23	.....	3	1	.....	6	0
24	.....	13	0	.....	8	1
25	.....	8	4	.....	4	1
26	.....	5	2	.....	4	2
27	.....	1	0	.....	7	1
28	.....	2	4	.....	7	3
29	.....	2	0	.....	6	0
30	.....	0	2	.....	4	3
31	.....	0	0	.....	2	1
32	.....	0	0	.....	0	3
33	.....	0	0	.....	1	0
Sum	.....	51	14	.....	56	15
Group:						
Median	24.85	24.46	26.25	25.84	26.25	28.84
Average	23.95	23.31	26.34	25.09	24.10	28.60
Range	14–30	14–29	21–30	17–33	17–33	24–32

[8] *Woody-McCall Arithmetic Scales, Mixed Fundamentals,* Series B, I and II.

TABLE XVII

Woody-McCall Arithmetic Scales, Mixed Fundamentals, B I. Time Required for One Correct Solution

Time in Seconds	NUMBER OF PUPILS					
	Fifth Grade			Sixth Grade		
	Total	Control	Selected	Total	Control	Selected
84–82	.....	1	0	.....	0	0
81–79	.....	0	0	.....	0	0
78–76	.....	0	0	.....	0	0
75–73	.....	0	0	.....	0	0
72–70	.....	1	0	.....	1	0
69–67	.....	1	0	.....	0	0
66–64	.....	1	0	.....	0	0
63–61	.....	2	0	.....	0	0
60–58	.....	3	0	.....	2	0
57–58	.....	6	1	.....	3	0
54–52	.....	3	0	.....	4	0
51–49	.....	13	0	.....	9	0
48–46	.....	11	3	.....	7	1
45–43	.....	5	4	.....	14	0
42–40	.....	2	1	.....	9	1
39–37	.....	2	0	.....	3	2
36–34	.....	0	2	.....	2	0
33–31	.....	0	1	.....	2	3
30–28	.....	0	2	.....	0	4
27–25	.....	0	0	.....	0	2
24–22	.....	0	0	.....	0	2
Sum	.....	51	14	.....	56	15
Group:						
Median	48.42	50.00	43.25	43.50	44.43	30.25
Average	49.35	51.60	41.11	43.00	46.03	31.70
Range	83.6–30.2	83.6–35.2	57.2–30.2	70.6–23.3	70.6–31.9	48.0–2.33

TABLE XVIII

Woody-McCall Arithmetic Scales, Mixed Fundamentals, B II. Number Correct Solutions in Twenty Minutes

Number Correct	NUMBER OF PUPILS					
	Fifth Grade			Sixth Grade		
	Total	Control	Selected	Total	Control	Selected
13	.....	3	0	.....	0	0
14	.....	0	0	.....	0	0
15	.....	0	0	.....	0	0
16	.....	0	0	.....	0	0
17	.....	1	0	.....	0	0
18	.....	2	0	.....	0	0
19	.....	0	0	.....	0	0
20	.....	1	0	.....	0	0
21	.....	2	0	.....	4	0
22	.....	4	0	.....	3	0
23	.....	6	0	.....	3	0
24	.....	10	2	.....	7	0
25	.....	8	1	.....	3	1
26	.....	6	2	.....	7	0
27	.....	4	2	.....	7	3
28	.....	1	2	.....	5	3
29	.....	5	3	.....	1	1
30	.....	0	1	.....	4	2
31	.....	0	2	.....	6	2
32	.....	0	0	.....	5	1
33	.....	0	0	.....	2	2
Sum	.....	53	15	.....	57	15
Group:						
Median	25.39	24.75	28.25	27.85	27.28	29.50
Average	24.57	23.71	27.60	27.15	26.59	29.26
Range	13–31	13–39	24–31	21–33	21–33	25–33

TABLE XIX

Woody-McCall Arithmetic Scales, Mixed Fundamentals, B II. Time Required for One Correct Solution

Time in Seconds	Number of Pupils: Fifth Grade: Total	Fifth Grade: Control	Fifth Grade: Selected	Sixth Grade: Total	Sixth Grade: Control	Sixth Grade: Selected
93–91	.....	2	0	.....	0	0
90–88	.....	0	0	.....	0	0
87–85	.....	0	0	.....	0	0
84–82	.....	0	0	.....	0	0
81–79	.....	0	0	.....	0	0
78–76	.....	0	0	.....	0	0
75–73	.....	1	0	.....	0	0
72–70	.....	1	0	.....	0	0
69–67	.....	0	0	.....	0	0
66–64	.....	0	0	.....	0	0
63–61	.....	1	0	.....	0	0
60–58	.....	1	0	.....	0	0
57–55	.....	3	0	.....	2	0
54–52	.....	1	0	.....	2	0
51–49	.....	3	0	.....	3	0
48–46	.....	7	0	.....	1	0
45–43	.....	6	0	.....	6	0
42–40	.....	5	2	.....	3	0
39–37	.....	2	0	.....	6	0
36–34	.....	5	3	.....	4	1
33–31	.....	4	1	.....	11	1
30–28	.....	6	5	.....	5	0
27–25	.....	5	2	.....	8	4
24–22	.....	0	1	.....	5	4
21–19	.....	0	1	.....	1	4
18–16	.....	0	0	.....	0	0
15–13	.....	0	0	.....	0	1
Sum	.....	53	15	.....	57	15
Group:						
Median	39.00	42.20	29.25	31.40	33.00	22.33
Average	40.69	43.50	30.70	34.16	35.37	23.80
Range	92.3–20.4	92.3–24.8	40–20.4	54.5–14.5	54.5–20.6	35.2–14.5

An examination of these tables reveals a marked superiority of the pupils of the special room over those of the same grades in the regular rooms. On Scale I, the median score for number of correct solutions in 20 minutes is, for the special fifth grade, almost two problems better than the median for the 5th-grade control group, and the difference is over two problems in case of the two 6th-grade groups. On Scale II, the special fifth grade exceeds its control group in median score by three and one-half problems, and the correspond-

ing difference in favor of the special 6th grade is practically two and one-fourth problems. If the averages are taken instead of the medians, all these differences are materially increased.

In the score by time required for one correct solution, Scale I, the special 5th-grade's median time is shorter by 6.75 seconds than that of its control group, and the special 6th grade is faster than its control group by over 14 seconds. For Scale II, the corresponding differences are 13 seconds (nearly) and 10.66 seconds. For both scales, and by both methods of scoring, in every case the median score of the special 5th-grade group reaches or exceeds the median score of the 6th-grade control group, and in every case but one (Table XVII) it exceeds that of the total 6th-grade group.

Bonser's tests for mathematical judgment[9] were given to the different rooms early in March. These consist of two sets of five two-step problems, stated in the usual textbook form (Test I, A and B), and two sets of five problems of the same difficulty as the preceding, so far as the processes which are involved are concerned, but stated in a less familiar way (Test II, A and B). Bonser says that Tests I and II test mathematical judgment, or, in general, that form of deductive reasoning of the usual scientific type, involving data, principles, and inferences. In giving them, when the first pupil to finish had completed his work, all turned the papers face downward, and they were collected. They were given first in the experimental room, and the time-limit for each grade in the control room was fixed at the number of seconds it took the first child in that grade in the special room to finish. This made the time in the fifth grade for List I A, 108 seconds; for List I B, 94 seconds; for List II A, 107 seconds; and for List II B, 64 seconds. The corresponding time-limits in the sixth grade were 103, 82, 73, and 64 seconds, respectively. In scoring the papers, Bonser's directions were followed, so that a grade of 2 was given for each correct solution of a problem in arithmetic. If one part of a two-step problem was right, and the other not, a grade of 1 was given. No deductions were made for inaccuracies in operations. In the accompanying table the scores of the four different lists have been combined, by adding, into one score for all.

[9] Bonser, F. G. *The Reasoning Ability of Children of the Fourth, Fifth, and Sixth School Grades.* Teachers College, Columbia University Contributions to Education, No. 37, pp. 2, 10, 14, 16.

TABLE XX

Bonser's Reasoning Tests I and II. (Mathematical Judgment)

Score	Number of Pupils: Fifth Grade Total	Fifth Grade Control	Fifth Grade Selected	Sixth Grade Total	Sixth Grade Control	Sixth Grade Selected
0	.....	5	0	.....	3	0
1–2	.....	7	0	.....	7	0
3–4	.....	6	2	.....	10	0
5–6	.....	7	0	.....	6	0
7–8	.....	7	2	.....	3	2
9–10	.....	2	2	.....	10	1
11–12	.....	5	1	.....	2	1
13–14	.....	1	1	.....	5	0
15–16	.....	2	1	.....	2	2
17–18	.....	1	3	.....	4	1
19–20	.....	1	2	.....	2	0
21–22	.....	1	0	.....	1	1
23–24	.....	1	0	.....	5	2
25–26	.....	1	0	.....	0	2
27–28	.....	0	0	.....	0	2
29–30	.....	0	1	.....	0	0
31–32	.....	0	0	.....	0	0
33–34	.....	0	0	.....	0	0
35–36	.....	0	0	.....	0	0
37–38	.....	0	0	.....	0	0
39–40	.....	0	0	.....	0	1
Sum	.....	47	15	.....	60	15
Group:						
Median	8.25	6.7	14.5	10.59	10.15	22.50
Average	9.19	7.7	13.89	11.88	9.78	20.27
Range	0–30	0–25	4–30	0–39	0–24	8–39

Here again, as with the tests in fundamentals, the selected group is far superior to the control group, and it is likewise again true that the median and average score for the special 5th grade exceed the median and average of the whole group of 6th-grade pupils, when those in the special room are not treated separately.

Language

The first of the several tests of language ability which were used was Winch's test for the invention of stories. This test is fully described in Whipple's *Manual* (Part II, p. 269), and may be regarded as putting a premium upon literary ability, or constructive imagination in the field of words. In giving it, there was presented

to each subject a sheet of paper at the top of which were printed ten words, with the instruction to write a story in which each of these ten words should be used. No time-limit was imposed. This test was given only to the special room, and was given twice. On October 31, the following list of words was used: *orphan*, *garden*, *hungry*, *station*, *parents*, *clothing*, *visitor*, *cottage*, *train*, *country;* on November 3 the test was repeated, with the following words: *snowstorm*, *children*, *ticket*, *clock*, *dog*, *screams*, *church*, *basket*, *river*, *ice*. The stories which the pupils wrote were graded by 17 graduate students in education, using the Hillegas-Thorndike scale for the measurement of quality in English composition,[10] with the results which are shown in Table XXI.

TABLE XXI

Quality of Composition (16 Judges)

		"Orphan" List	"Snowstorm" List
Fifth Grade	Median	37.8	37.7
	Average	38.02	39.42
	Range	27.7–47.6	28.4–49.1
Sixth Grade	Median	47.2	45.6
	Average	47.8	44.1
	Range	33.7–63.0	28.6–62.5

Starch[11] publishes standards for the Hillegas-Thorndike scale, derived from the ratings of compositions written by over 5,000 pupils, including the reports of the Butte, Montana, and Salt Lake City, Utah, surveys. Trabue, as a result of his investigations of composition tests and measurements in a number of typical school systems, including those mentioned above, has proposed tentative standard medians, showing the quality of compositions to be expected from at least half of a normal class at the end of any given school year.[12] These proposed standards are higher than the majority of the schools in Trabue's list have actually achieved, although at each grade at least one school has excelled the standard. Both Starch's and Trabue's standards are given in Table XXII.

[10] Thorndike, E. L. *Preliminary Extension of the Hillegas Scale for the Measurement of Quality in English Composition by Young People.*

[11] Starch, D. *Educational Measurements*, p. 145.

[12] Trabue, M. R. Supplementing the Hillegas Scale. *Teachers College Record*, 18: 51–84.

TABLE XXII

Standard Scores for the Hillegas-Thorndike Scale (After Starch and Trabue)

Grades	IV	V	VI	VII	VIII
Standards (Starch)	26	31	36	41	46
Standards (Trabue)	35	40	45	50	55

By comparing our results with these scores, it will be seen that our special 5th-grade pupils at the beginning of the year had reached a standard of quality in English composition almost equal to Starch's 7th-grade standard, and that the 6th-grade, if we take the mean of the two tests, had 8th-grade ability at that time. By Trabue's standards, which are admittedly somewhat higher than those found in practice, the 5th grade at the beginning of the year had practically that degree of ability to be expected from them at the close of the year, and the same thing is true of the sixth grade.

It must be remembered, however, that in giving a list of ten words which must be used in these stories, a factor was introduced which would not have to be reckoned with in rating compositions written under ordinary circumstances. Just what the effect of this factor would be, is difficult to determine; it is a question whether compositions thus written would grade higher or lower on the scale than those written under a set subject. I am inclined to think, however, that furnishing the list of words tended to raise the quality of the composition, and that, therefore, our scores are just a little too high to be a fair measure of the ability of these pupils in composition. The words that were given in the test probably suggested a plot and made for a coherent development that otherwise might not have been obtained. On the other hand, there was the disadvantage of loss of freedom and initiative, with the consequent creation of a somewhat artificial situation.

Trabue's Language Scales

In Trabue's Completion-Test Language Scales, we have a test for language ability of a different type. These scales represent varieties of the well-known completion method, or completion tests, which consist of a series of sentences in which certain words are elided. The task is to fill each blank with a single word that makes sense. There is evidence that there is a rather high positive correlation between

ability in Trabue's tests and ability in other tests of language and also general intelligence. Scales B and C of these tests were given to the special room in the latter part of October, and to the control rooms about the middle of December. They were given and scored in exact accordance with Trabue's directions.[13] For our purposes, the scores for the two tests have been combined, by adding, into a single score. The scores thus obtained are displayed in Table XXIII.

TABLE XXIII

Combined Scores, Trabue Language Scales B and C

Score	Number of Pupils					
	Fifth Grade			Sixth Grade		
	Total	Control	Selected	Total	Control	Selected
12	.....	2	0	.....		0
13	.....	1	0	.....	1	0
14	.....	0	0	.....	0	0
15	.....	0	0	.....	0	0
16	.....	2	0	.....	2	0
17	.....	2	0	.....	1	0
18	.....	0	0	.....	4	0
19	.....	3	0	.....	2	0
20	.....	2	0	.....	4	0
21	.....	3	1	.....	7	1
22	.....	6	1	.....	6	0
23	.....	7	3	.....	5	1
24	.....	2	0	.....	2	1
25	.....	8	0	.....	2	1
26	.....	2	3	.....	6	1
27	.....	0	2	.....	6	5
28	.....	3	1	.....	3	0
29	.....	0	2	.....	2	1
30	.....	1	0	.....	3	1
31	.....	0	0	.....	1	0
32	.....	2	1	.....	1	0
33	.....	0	1	.....	0	0
34	.....	0	0	.....	0	1
35	.....	0	0	.....	0	1
36	.....	0	0	.....	0	1
Sum	.....	46	15	.....	58	15
Group:						
Median	23.80	22.48	26.70	24.83	23.39	27.50
Average	23.25	22.39	26.30	24.32	23.50	27.90
Range	12–33	12–32	21–33	13–36	13–32	21–36

[13] Trabue, M. R. *Completion-Test Language Scales.* Teachers College, Columbia University Contributions to Education, No. 77, especially pp. 19–22, 78–80, 117–118.

In this test, again, the median and average scores attained by the 5th-grade pupils in the special room are above those for the 6th grade of the school, taken as a single group. Trabue gives the following as the tentative standard scores in his Language Scales B, C, D, and E, which, he says, are practically equal in difficulty.

TABLE XXIV

Tentative Standard Scores in Trabue's Language Scales B, C, D, and E (Trabue)

Grade	V	VI	VII	VIII	IX	X	XI	XII
Median................	9.6	11.0	12.3	13.3	14.2	15.3	15.8	16.2

Since in Table XXIII the individual scores represent the sum of the scores in two scales, if we assume those scales to be of equal difficulty, the scores there given may be compared with the standards by dividing them by 2. With that adjustment, it will be seen that the special 5th grade reaches the 8th-grade standard, and the 6th grade almost, though not quite, reaches the 9th-grade. The total 5th-grade group, treated in the mass, excels the 6th-grade standard, and in the same way the total 6th grade goes above the standard proposed for the seventh. Trabue remarks, however, that his proposed standards are more likely to prove too low than too high.

Reading

The reading scales which were used were those devised by Thorndike, namely, his Reading Scale A[14] and Reading Scale Alpha 2.[15] Reading Scale A, or the "visual vocabulary scale," is designed to measure ability in reading words, while Scale Alpha 2 measures ability in paragraph reading. Both scales primarily measure comprehension, leaving speed out of account, although the latter is an important element in reading.

Thorndike Reading Scale A, the visual vocabulary scale, was given to the selected room on October 17, and to the control rooms on January 18, just three months later. This difference in time would work to the disadvantage of the selected pupils, and must be taken into account in comparing their scores with those made by the pupils in the other rooms. By Thorndike's method of scoring, the selected

[14] Thorndike, E. L. The measurement of ability in reading. *Teachers College Record*, 15: September, 1914, 207–277.

[15] Thorndike, E. L. An improved scale for measuring ability in reading. *Teachers College Record*, 16: November, 1915, 31–53.

5th grade attained a class score of 6.38 and the selected 6th grade one of 7.83. Thorndike's standards for this test, by class scores, are for the 5th grade, 5.3; for the 6th, 6.4; for the 7th, 7.1; and for the 8th, 8.2. It will be seen, then, that our 5th grade, shortly after the beginning of the year, had attained practically the 6th-grade standard in this test, while the 6th grade, at the same time, had almost achieved the 8th-grade standard.

In addition to being scored according to Thorndike's directions, this test was also scored by the method of dividing the per cent of accuracy by the time. Table XXV shows the results as scored by the latter method.

TABLE XXV

Thorndike's Reading Scale A, Accuracy Divided by Time

Score*	Number of Pupils					
	Fifth Grade			Sixth Grade		
	Total	Control	Selected	Total	Control	Selected
21– 30	.....	1	0	.....	1	0
31– 40	.....	8	0	.....	1	0
41– 50	.....	5	2	.....	2	0
51– 60	.....	5	3	.....	3	0
61– 70	.....	8	1	.....	3	0
71– 80	.....	4	2	.....	7	2
81– 90	.....	6	0	.....	7	0
91–100	.....	3	1	.....	8	0
101–110	.....	2	3	.....	6	1
111–120	.....	2	1	.....	5	1
121–130	.....	1	1	.....	3	1
131–140	.....	5	0	.....	2	2
141–150	.....	1	0	.....	1	1
151–160	.....	0	0	.....	2	1
161–170	.....	0	0	.....	3	2
171–180	.....	0	0	.....	0	0
181–190	.....	0	0	.....	0	1
191–200	.....	0	0	.....	1	1
201–210	.....	0	1	.....	1	0
211–220	.....	0	0	.....	2	0
221–230	.....	0	0	.....	0	0
231–240	.....	0	0	.....	1	0
241–250	.....	0	0	.....	0	1
251–260	.....	0	0	.....	0	0
261–350	.....	0	0	.....	0	0
351–360	.....	0	0	.....	0	1
Sum	.....	51	15	.....	59	15
Group:						
Median	72.5	71.3	78.4	104.3	100.4	147.4
Average	78.5	75.3	89.3	117.2	106.7	158.5
Range	26–204.4	41–204.4	26–145	26–354.5	26–236	78–354.5

* To avoid decimal points, these scores have been multiplied by 100.

Thorndike's Scale Alpha 2 was given in all the rooms at about the middle of February. In scoring the results, only Steps 7 to 9, inclusive, were taken into account. This test was also scored in two ways. The class score for the special 5th grade, computed by Thorndike's methods, was 7.14, and for the 6th it was 7.25. Thorndike's standard for the 5th grade is 5.7; for the 6th, 6.5; for the 7th, 7.0; and for the 8th, 7.5. The special 5th grade, therefore, at the time this test was given, had attained an ability in comprehension of paragraphs some-

TABLE XXVI

Thorndike's Reading Scale Alpha 2, Steps 7 to 9. Scores by Sum of Weighted Answers

	NUMBER OF PUPILS					
	Fifth Grade			Sixth Grade		
Scores	Total	Control	Selected	Total	Control	Selected
11– 15	.....	1	0	.....	0	0
16– 20	.....	0	0	.....	0	0
21– 25	.....	2	0	.....	1	0
26– 30	.....	1	0	.....	0	0
31– 35	.....	0	0	.....	0	0
36– 40	.....	1	0	.....	4	1
41– 45	.....	3	1	.....	1	0
46– 50	.....	3	0	.....	2	0
51– 55	.....	3	0	.....	4	0
56– 60	.....	6	0	.....	4	0
61– 65	.....	4	0	.....	1	0
66– 70	.....	4	1	.....	5	0
71– 75	.....	4	1	.....	7	3
76– 80	.....	3	1	.....	2	1
81– 85	.....	7	0	.....	5	1
86– 90	.....	1	0	.....	0	0
91– 95	.....	2	1	.....	3	1
96–100	.....	2	2	.....	3	0
101–105	.....	0	0	.....	1	0
106–110	.....	4	0	.....	4	0
111–115	.....	0	2	.....	4	1
116–120	.....	0	2	.....	1	3
121–125	.....	0	2	.....	2	0
126–130	.....	0	1	.....	0	1
131–135	.....	0	0	.....	2	1
136–140	.....	0	0	.....	1	0
141–145	.....	0	1	.....	1	0
146–151	.....	0	0	.....	1	2
Sum	.....	51	15	.....	59	15
Group:						
Median	74.5	76.5	112.25	82.25	76.83	113.50
Average	75.63	68.14	101.00	86.96	82.44	102.04
Range	14–141.66	14–108.3	44–141.66	21–149	21–148	39–149

what above the standard to be expected of the 7th grade, while the special 6th grade was a little higher, though not quite up to the 8th-grade standard. Allowing for the fact that at the time this test was given these special grades were, by virtue of the work they had done and were doing, really at the beginning of the 6th and 7th grades, respectively, their class scores are a year ahead of the standards set for the test.

The other way in which Scale Alpha 2 was scored was by multiplying the number of correct answers at each step of the scale by the value of the step and taking the sum of the products thus obtained. Table XXVI (on opposite page) displays the results by this method of scoring.

The difference in favor of the special room over the control rooms is much more marked with Scale Alpha 2 than with Scale A. It will be noticed that on the latter scale, the selected 5th grade in median score again excels the total 6th grade. This did not happen with the scores for Scale A, but it must be remembered that, as that scale was given, the control rooms had an advantage of three months' time over the experimental room—a circumstance which would tend to decrease somewhat the difference between them.

Summary

This chapter has been devoted to a consideration of the results obtained by applying various tests of ability in the fundamental branches of the course of study to the pupils of the experimental room at different times throughout the year. In some cases it has been possible to compare these results with standard scores or norms already evaluated or proposed. In other cases, the scores obtained in the experimental room have been compared with results secured by giving the same tests to a control group, made up of children in other rooms enrolling pupils of the same grades. Quality of handwriting was measured by the Ayres and Thorndike scales, spelling ability by Ayres' scale and Starch's lists, ability in the fundamental operations of arithmetic by the Woody arithmetic scales and the Woody-McCall scales in the mixed fundamentals, arithmetical reasoning by Bonser's tests for mathematical judgment, quality of composition by the Hillegas-Thorndike scale, linguistic ability of a more general type by

Trabue's completion-test language scales, ability to comprehend words by Thorndike's reading scale A, and ability to comprehend sentences by the same author's reading scale Alpha 2.

The results of these tests have been markedly consistent. When the pupils of the special room are measured by the scales and tests in any subject for which norms have been provided, they are found to be at least one year advanced. In every case, save two, when the scores of a test in the special room have been compared with the scores made by the control groups in the same test, it has been seen that the median score attained by the special 5th grade has reached or exceeded that made by the whole 6th grade of the school, treated as a single group, and including, it is to be remembered, the 6th-grade pupils enrolled in the special room. The two exceptions are found in the Woody-McCall Scale B I, when scored by time required for one correct solution (Table XVII) and in the Thorndike visual vocabulary reading scale, when scored by accuracy divided by time (Table XXV).

In the last chapter it was shown that, judged by the ordinary estimates of the quality of school work—teachers' marks, examination marks, and the like—the 5th-grade class of the experimental room had, by about the middle of the year, been recognized as ready and fit to go on with the work of the next grade, and that they had accordingly taken up that work. The same thing is true of the special 6th grade. The results of the tests which have been discussed in this chapter show that the 5th grade at that time had become in all reality a 6th grade—and not merely a 6th grade because it was doing the work of the 6th year in the course of study; it had been measured against the total 6th-grade group of the school, and had been found to equal or surpass it in median and average achievement. It has not been possible to measure the special 6th grade against the 7th grade of the school, but so far as we have been able to determine by the use of the tests for which standards are given, it, too, has justified the action of those in charge of it in allowing it to take up the work of the 7th grade. So long as only teachers' marks or opinions are offered as evidence in favor of the rapid advancement of bright pupils, the question may arise whether these pupils are advanced in anything more than name. In this particular case, however, the judgment of the teacher and the superintendent concerning the ability of the

pupils to do the work of the next higher grade was corroborated by the more scientific scales and tests, which showed that, although these pupils were by May 1st a year ahead of where they would have been in the course of study had they remained in the regular rooms, they were not misplaced, at least so far as ability in the fundamental branches was concerned.

If we admit the validity of the various tests and scales, and if we admit that the conditions under which the experiment was carried out may be regarded as typical—and it is difficult to find any reason for not admitting it—then we have shown that children representing at least the top tenth of the 5th and 6th grades are able to do two years of the work of those grades in one year.

CHAPTER V

RESULTS OF A PRACTICE-TEST IN MULTIPLICATION

In order to secure information concerning the effects of practice, or drill, a practice-test in multiplication was carried on during the two weeks between February 23 and March 12, 1917. The material used for this experiment consisted of Sheets 15 and 16 of Thompson's *Minimum Essentials in Arithmetic*.[1] Sheet 16 is a quick-written test sheet in multiplication including products up to 100 not given in multiplication tables 1–12. It contains 162 indicated multiplications, each followed by a space in which the product is to be written, thus: $13 \times 5 =$, $2 \times 13 =$, and so on. Sheet 15 is a practice sheet of exactly similar character, save that it is printed on both sides, so that the incomplete multiplications on Side A are repeated on Side B, but in a different order.

On Friday, February 23, Sheet 16 was used in giving a check test to all the rooms in the building enrolling pupils in the 5th or 6th grades, namely, Room 5 Y, containing 38 pupils; Room 5–6 F, with 19 5th-grade and 19 6th-grade pupils; Room 6 G, enrolling 43 pupils in the 6th grade; and the 'experimental,' or 'special,' room, which at the time this test was given had a membership of 16 in the 5th and 16 in the 6th grade (at about the middle of the year a pupil had been transferred to each of these grades from one of the regular rooms). It will be remembered that Rooms 5 Y, 5–6 F, and 6 G constitute what in previous chapters has been referred to as the "control group." The practice test itself was not carried out in Room 5-6 F, but that room was tested at the beginning and at the end of the experiment, and thus served as a check upon the improvement in the other rooms, the better so because it contained pupils of both the grades which were receiving practice.

[1] Ginn and Company, Publishers.

Method of Giving the Tests

In giving this initial test, the papers were distributed face down, the nature of the work to be done was carefully explained to the children, and they were told to work as rapidly as possible. At a given signal they turned the papers over and began work. As soon as any child had finished, he raised his hand, and his time, taken on a stop-watch, was immediately recorded. In scoring the papers, the per cent of accuracy was computed for each, and the time reduced to seconds. These two measures were combined into a single measure by dividing the time by the per cent of accuracy, thus obtaining a quantity which may be described as the number of seconds required to attain one per cent of accuracy. The same test was given at the close of the two weeks' practice and scored in the same way. The results of these two tests are exhibited in tables which will be included in the present chapter.

The actual practice was done under a somewhat different method. For this, Sheet 15, which has already been described, was used. Since this sheet is printed upon both sides, it was decided, in order to restrict the learning to the "multiplication facts" (to use Thompson's phrase) that are involved, to begin the practice on one side of the sheet one day and the other the next. Consequently, the first day's practice began on Side A, the second on Side B, and so on as long as the practice lasted. In this way, there was less opportunity for forming connections between adjacent products or for learning the products as a series down a column. In giving the practice tests the papers were distributed with the side upon which the day's practice was to begin turned down. Practically the same instructions and methods of beginning the work were used as in connection with the initial check test. Each day's practice was limited to ten minutes, at the end of which time a signal to stop was given, and the papers were collected. If any pupil succeeded in finishing the first side of the sheet before the end of the practice period, he turned the sheet over and began work on the other side. The few pupils who now and then succeeded in finishing both sides within the allotted ten minutes were at once supplied with another copy of the same sheet, handed them in such a way that they began work on the same side with which they had begun the first sheet.

The first practice test was given on Monday, February 27; the last one on Friday, March 9, with the final check test on the following Monday. It will be observed that Saturday and Sunday intervened between the initial test and the first practice, and that the same interruption came between the fifth and sixth practice periods, and between the last practice period and the final check test. All the tests were given at the same time of day in each room, and as nearly as possible at the same time in all the rooms. In Rooms 6G and 5Y they were given at 1:30 P.M., and in the special room at 2:00 P.M.[2] In Room 5-6F the check tests, which were the only ones given, were in each case given at three o'clock in the afternoon.

Method of Scoring

In scoring the results the pupils exchanged papers and marked mistakes as the correct products were read to them. The scoring of the pupils was afterwards checked, but almost no errors were found. The score for each paper was taken simply as the number of correct products written in ten minutes.

At the close of each day's practice the pupils were told their scores of the day before. These they recorded, and were thereby enabled to keep track of their progress. The effect of this was to ward off a drop in efficiency through loss of interest. Those who had the experiment in charge feel that there was no such loss, although at the close of the second week of practice there were signs that a decline in interest might have appeared, in the case of at least some of the pupils, had the experiment been continued much longer.

The accompanying tables show, by rooms and individuals, the daily scores (correct multiplications) made during the ten practice periods. No broken records are included; that is, the scores are given only for those pupils who were present for practice every day during the two weeks.

[2] The tests were given in Room 6G by the author, in the other rooms by Miss Coy.

TABLE XXVII

Improvement in Multiplication. Twenty-seven Fifth-Grade Pupils. Score by Number Correct Products. Room 5 Y

No.*	Mon.	Tues.	Wed.	Thur.	Fri.	Mon.	Tues.	Wed.	Thur.	Fri.
1........	98	113	105	117	130	129	129	141	157	156
2........	201	213	239	240	270	267	292	278	298	290
3........	69	84	68	99	88	105	108	110	113	121
5........	187	182	188	183	202	160	254	236	251	272
6........	63	65	60	75	88	71	79	106	104	131
10........	53	66	60	72	79	82	88	82	108	120
11........	120	132	159	178	196	175	189	204	202	184
12........	57	86	64	106	111	115	133	122	123	142
13........	84	83	67	53	84	87	88	94	95	96
14........	98	96	96	113	113	113	141	144	150	161
16........	199	180	196	185	205	202	223	203	187	203
17........	131	135	158	162	154	136	166	160	173	175
18........	111	119	135	153	165	163	178	186	188	195
19........	137	117	118	153	158	161	167	178	193	213
20........	91	82	79	108	117	103	143	130	129	147
21........	97	100	111	131	141	158	161	161	176	175
22........	58	56	53	55	85	94	91	107	110	146
23........	168	157	146	170	159	166	184	197	222	218
24........	71	94	111	120	137	125	150	157	144	145
26........	108	114	130	140	150	147	174	170	176	181
27........	67	76	77	71	75	94	93	84	95	103
28........	130	149	154	173	183	169	196	197	210	212
29........	88	90	110	143	147	149	168	162	174	172
30........	93	88	103	100	123	127	135	149	155	180
32........	79	74	96	77	95	102	122	170	135	129
37........	79	78	90	101	113	123	116	134	156	150
41........	88	92	95	114	120	132	149	147	133	137
Average...	100.96	108.2	113.6	125.8	136.6	135.4	153.2	155.9	161.4	172.4

* Breaks in numbering are caused by the omission of incomplete records.

TABLE XXVIII

Improvement in Multiplication. Twenty-nine Sixth-Grade Pupils. Score by Number Correct Products. Room 6 G

No.	Mon.	Tues.	Wed.	Thur.	Fri.	Mon.	Tues.	Wed.	Thur.	Fri.
1........	209	247	266	311	315	349	354	390	375	345
2........	152	168	181	194	195	181	214	237	235	205
3........	140	151	170	189	198	193	189	202	212	215
4........	169	168	184	172	235	224	242	275	281	271
5........	216	243	285	299	352	365	375	398	387	391
6........	106	99	112	128	140	146	144	166	175	184
7........	174	198	211	255	266	275	295	314	306	304
9........	114	122	128	131	132	147	162	163	149	167
10........	69	93	113	110	125	117	132	156	158	165
11........	165	180	183	209	230	248	232	239	245	275
12........	67	85	113	107	130	124	142	152	138	140
13........	147	166	179	203	216	236	230	246	238	243
14........	110	121	127	149	139	151	169	174	167	177
15........	193	221	238	289	266	257	232	290	267	277
16........	60	65	68	77	99	118	110	127	120	125
18........	118	149	140	179	161	179	190	190	193	203
20........	182	194	218	250	254	253	268	292	316	345
21........	53	78	94	117	109	101	128	121	115	127
23........	195	208	199	223	218	228	229	252	231	212
24........	120	128	135	122	123	136	173	165	176	186
25........	157	166	199	190	186	212	218	230	243	267
28........	95	106	125	133	126	119	128	156	160	164
29........	185	239	209	242	246	286	314	343	306	345
30........	56	102	95	119	118	111	156	174	157	187
32........	71	73	78	83	90	94	95	89	99	113
37........	135	148	117	167	187	193	199	193	178	200
39........	204	252	251	286	297	314	230	333	330	331
40........	80	65	96	98	123	117	136	140	144	145
43........	47	64	52	70	64	84	72	72	88	129
Average...	130.7	148.3	157.5	175.8	184.1	188.6	202.0	216.5	213.1	222.0

TABLE XXIX

Improvement in Multiplication. Special Room

Grade	No.	Mon.	Tues.	Wed.	Thur.	Fri.	Mon.	Tues.	Wed.	Thur.	Fri.
	1	90	92	128	116	153	147	153	168	187	194
	2	115	98	132	142	174	153	149	124	152	168
	3	122	161	175	189	203	194	201	214	211	226
	4	73	76	96	94	124	129	135	137	154	194
	5	78	100	118	146	159	160	163	159	186	175
	6	99	99	81	114	130	131	146	151	158	165
V	8	118	99	118	140	137	150	155	175	185	193
	10	126	156	168	186	192	193	194	204	198	205
	11	111	145	142	136	160	162	152	174	174	175
	13	134	105	108	116	104	135	151	134	157	164
	14	60	76	93	99	96	106	102	115	120	129
	15	104	113	152	151	174	150	161	187	204	211
	31	95	89	94	111	105	114	110	126	130	144
Average..		101.9	108.4	123.5	133.8	147.0	148.1	151.7	159.1	170.5	180.2
	16	130	144	156	166	160	163	169	175	185	184
	17	169	184	193	213	218	217	245	254	276	323
	18	221	223	220	270	278	301	301	319	358	383
	19	174	188	233	257	256	222	246	277	275	300
	20	160	193	199	215	222	225	242	275	228	258
	21	153	142	142	170	157	152	150	186	202	209
	22	116	98	145	160	150	148	170	176	176	167
VI	23	98	126	146	151	156	158	155	169	192	177
	24	158	160	190	189	209	205	232	234	257	277
	25	171	184	193	210	216	222	218	242	246	267
	26	185	198	232	213	240	233	231	271	298	331
	27	247	298	356	264	365	379	370	402	393	405
	28	139	165	184	222	239	243	243	247	264	269
	29	186	195	200	208	214	242	264	275	293	279
	30	160	162	179	198	206	215	231	221	224	256
	32	100	92	123	119	137	155	177	174	181	198
Average..		160.4	172.0	193.2	207.8	213.9	217.5	227.8	243.6	253.0	267.7

The Practice-Curves

These tables and the curves drawn from them are sufficiently self-evident as to need little discussion. Just a few features may be pointed out, however. In the first place, it will be noticed that on the first day of the practice test, the average ability of the 5th-grade control group and the special 5th-grade group was practically the same (about 101 correct solutions in the ten minutes of practice time). At the end of the ten periods of practice, the average score of the control group was 172, while that of the special group was 180. Of course, this is not a great difference even yet, but it must be remembered that

a difference of eight correct solutions at that level represents a larger difference in attainment than a difference of eight solutions at the level at which the test began. The difference is more marked in the case of the 6th-grade groups. The control group began with an average score of 131 and made a gross gain of 91, while the selected group began 30 multiplications above them and made a gross gain of 107, so that the difference between the two groups, in average score, was larger at the close of the practice than at the beginning, and the difference is all the greater when we take into consideration the increased difficulty attending improvement as the upper limit is more and more closely approached.

Inspection of the curves drawn from the daily averages of the several groups reveals a check in their rise, located at the sixth period, which came on a Monday. In this, the influence of the lack of practice on Saturday and Sunday may be shown. It will also be observed that this loss was rather quickly made up. In only two instances did any group in its average score fall below a score which it had already attained, and only one of these is of any consequence. This happened in Room 6G, or the 6th-grade control group, just after the middle of the second week. It is the opinion of the writer that the great increase in the room's score upon Wednesday of that week was due to an increased enthusiasm arising from a general agreement among the pupils that they would see how good a record they could make. If such was the case, there was a slight falling off in enthusiasm next day, although Friday's score in turn exceeded the high score made on Wednesday. It is difficult to determine in any such experiment just what part is played by changes in the attitude of the subjects (rivalry, increase and decrease of interest, ideals of accuracy, etc.). It really does not matter so much, however, since these things are characteristic traits which enter quite intimately into the work of learning, so that to try to eliminate them from a practice experiment like this would create an artificial situation. Since the aim of the experiment was to see how much improvement these children could make in learning these particular number combinations under actual school conditions, it was considered unwise to caution them against doing things which they otherwise might not think of, and for that reason nothing was said about practice at home or elsewhere outside of the of the time set apart for it in the schoolroom. So far as could be learned after the experiment was finished, very little, if any, outside practice was engaged in.

Results of the Check Tests

To secure data concerning improvement in speed and accuracy, as well as to obtain a check upon the experiment in general, the test which has been described above as the initial and final check test was given to all the rooms which took part in the practice, as well as to another room containing pupils of the same grades, but which did not participate in the practice series proper. Tables XXX to XXXIII, inclusive, show the results obtained by these tests. In interpreting the figures given in the last two columns of each of these tables, namely, the quotients obtained by dividing the time by the accuracy, it must be remembered that the smaller the figure, the higher the degree of attainment.

TABLE XXX

Results of Initial and Final Check Tests. Fifth-Grade Pupils. Room 5 Y

Pupil's Number	Per Cent. of Accuracy		Time in Seconds		Time ÷ Accuracy	
	Initial	Final	Initial	Final	Initial	Final
1	96.9	98.1	802	640	8.3	6.5
2	98.1	99.4	583	327	5.9	3.3
3	99.4	98.1	1183	849	11.9	8.7
5	99.4	93.8	660	364	6.7	3.9
6	97.5	97.5	1170	892	12.0	9.2
10	98.8	99.4	1350	888	13.7	8.9
11	99.4	99.4	870	458	8.8	4.6
13	79.0	83.3	1170	814	14.8	9.8
14	94.4	96.3	836	606	8.8	6.3
16	100.0	100.0	505	445	5.0	4.5
17	99.4	99.4	690	597	7.0	6.0
18	95.1	96.9	1710	616	18.0	6.4
19	98.8	98.1	1000	474	10.1	4.8
20	93.8	97.5	805	652	8.6	5.7
21	100.0	98.1	1020	558	10.2	5.7
22	91.9	96.3	1235	944	13.4	9.8
23	99.4	99.4	705	447	7.1	4.5
24	96.3	98.1	1030	740	10.7	7.6
26	100.0	100.0	1590	570	15.9	5.7
27	97.5	99.4	1125	825	11.5	8.3
28	100.0	99.4	775	465	7.7	4.7
29	98.8	98.1	900	486	9.1	4.9
32	96.9	96.9	1155	816	11.9	8.4
37	98.8	98.1	1035	647	10.5	6.67
41	95.1	94.4	1070	750	11.3	7.9
Average	97.0	97.4	959	608	10.4	6.5
Poorest	79.0	83.3	1710	944	18.0	9.8
Best	100.0	100.0	505	327	5.0	3.3

TABLE XXXI

Results of Initial and Final Check Tests. Sixth-Grade Pupils. Room 6 G

No.	Per Cent. of Accuracy		Time in Seconds		Time ÷ Accuracy	
	Initial	Final	Initial	Final	Initial	Final
1	96.9	95.1	520	315	5.4	3.3
2	99.4	98.8	771	429	7.8	4.3
3	96.9	99.4	545	505	5.6	5.1
4	96.9	95.7	480	328	5.0	3.5
5	98.1	93.2	780	245	8.0	2.6
6	96.9	98.8	552	605	5.7	6.1
7	98.8	79.0	605	300	6.1	3.8
9	100.0	97.5	1050	625	10.5	6.4
10	98.8	100.0	780	630	7.9	6.3
11	96.3	95.1	561	405	5.8	4.3
12	98.8	94.4	830	570	8.4	6.0
13	98.8	99.4	630	400	6.4	4.0
15	95.1	96.9	562	404	5.9	4.2
16	96.3	100.0	940	835	9.9	8.4
18	98.1	95.1	610	470	6.2	4.9
20	98.8	99.4	548	315	5.6	3.2
21	98.8	100.0	830	875	8.4	8.8
23	96.3	96.9	450	364	4.7	3.8
24	98.8	95.1	725	545	7.3	5.7
25	93.8	77.7	600	260	6.4	3.4
28	97.5	95.1	840	745	8.6	7.8
29	99.4	99.4	560	420	5.6	4.2
30	87.1	96.9	1390	605	16.0	6.2
32	95.7	100.0	950	775	10.0	7.8
37	95.7	92.6	770	526	8.0	5.7
39	100.0	98.1	490	280	4.9	2.9
40	96.3	100.0	720	655	7.5	6.6
43	99.4	99.4	1500	955	15.1	9.6
Average	93.9	96.0	744	527.7	7.33	5.3
Poorest	87.1	77.7	1500	955.0	15.1	9.6
Best	100.0	100.0	450	260.0	4.5	2.6

TABLE XXXII

Results of Initial and Final Check Tests. Special Room

Grade	No.	PER CENT OF ACCURACY		TIME IN SECONDS		TIME ÷ ACCURACY	
		Initial	Final	Initial	Final	Initial	Final
V..........	1	99.4	98.8	1042	450	10.5	4.6
	2	96.9	99.4	825	510	8.5	5.1
	3	96.3	95.7	703	305	7.3	3.2
	4	99.4	100.0	1341	792	13.8	7.9
	5	99.4	99.4	1170	556	11.8	5.6
	6	95.7	99.4	1178	623	12.3	6.3
	8	99.4	99.4	805	432	8.1	4.4
	10	98.8	99.4	760	406	7.7	4.1
	11	97.6	98.1	883	504	9.1	5.1
	13	98.8	97.5	1053	526	10.7	5.4
	14	100.0	100.0	1232	712	12.3	7.1
	15	99.4	98.8	1070	495	10.8	5.0
	31	100.0	99.4	830	600	8.3	6.0
Average	......	98.5	98.9	999	531	10.1	5.3
Poorest.	......	95.7	95.7	1341	792	13.5	7.9
Best....	......	100.0	100.0	703	305	7.3	3.2
VI.........	16	96.9	96.9	863	380	8.9	3.9
	17	98.8	99.4	703	317	7.1	3.2
	18	99.4	96.9	457	227	4.6	2.3
	19	98.8	98.1	616	304	6.2	3.1
	20	99.4	99.4	590	390	6.0	3.9
	21	95.1	96.3	827	460	8.7	4.8
	22	98.1	98.1	765	535	7.8	5.5
	23	97.5	96.9	856	485	8.3	5.0
	24	95.1	95.7	710	317	7.5	3.3
	25	98.8	98.8	780	328	7.9	3.3
	26	98.8	98.1	540	225	5.5	2.3
	27	96.9	99.4	410	215	4.2	2.1
	28	98.8	97.5	621	325	6.3	3.3
	29	97.5	94.4	612	290	6.3	3.1
	30	99.4	98.8	685	335	6.9	3.4
	32	99.4	100.0	930	548	9.4	5.5
Average	......	98.0	97.8	685	355	7.01	3.6
Poorest.	......	95.1	94.4	930	548	8.9	5.5
Best....	......	100.0	100.0	410	215	4.2	2.1

TABLE XXXIII

Results of Initial and Final Check Tests. Room 5-6 F (Unpracticed Room)

		Per Cent. of Accuracy		Time in Seconds		Time ÷ Accuracy	
Grade	No.	Initial	Final	Initial	Final	Initial	Final
	1	96.9	98.1	945	807	9.8	8.2
	2	93.2	98.1	740	642	7.9	6.5
	3	100.0	99.4	1003	912	10.0	9.2
	4	98.8	95.7	1144	827	11.6	8.6
	5	91.3	95.7	1183	1120	13.0	11.7
	6	97.5	97.5	952	960	9.8	9.9
V..........	7	96.3	96.3	1190	1118	12.4	11.6
	8	98.1	99.4	772	683	8.9	6.9
	9	96.9	99.4	1250	1273	12.9	12.8
	10	96.9	95.7	820	805	8.5	8.4
	11	96.3	100.0	825	875	8.6	8.8
	12	99.4	96.3	845	687	8.5	7.2
	13	96.9	96.9	1006	912	10.4	9.4
	14	98.1	95.7	1054	933	10.8	9.8
Average	......	96.9	97.4	989	897	10.2	9.2
Poorest.	......	91.3	95.7	1250	1273	13.0	12.8
Best....	......	100.0	100.0	740	642	7.9	6.5
	15	100.0	98.8	706	642	7.1	6.5
	16	99.4	98.1	875	703	8.8	7.8
	17	99.4	99.4	505	475	5.1	4.8
	18	100.0	100.0	805	623	8.8	6.2
	19	95.7	93.8	937	834	9.8	8.9
	20	100.0	99.4	1125	742	11.2	7.5
VI.........	21	98.8	87.7	1332	1110	13.5	12.7
	22	95.1	98.8	1026	877	10.8	8.9
	23	96.3	96.9	695	820	7.2	8.5
	24	98.1	95.1	660	496	6.7	5.2
	25	97.5	99.4	828	706	8.5	7.1
	26	98.1	98.8	1200	875	9.4	8.9
	27	98.1	98.8	440	380	4.5	3.9
Average	......	98.2	97.3	835	714	8.51	7.4
Poorest.	......	93.2	93.8	1332	1110	13.5	12.7
Best....	......	100.0	100.0	440	380	4.5	3.9

Nature of the Improvement

The improvement has been, of course, an improvement in speed, because the accuracy was already close to the upper limit at the beginning of practice. Many of the number combinations called for were already known, and the rest could readily be computed mentally, so that any inaccuracy here implies carelessness rather than lack of knowledge. The activities demanded were not wholly mental, for in

addition to the computation of the required result, in case it was not known, there was demanded the physical act of writing it down. Improvement in time, therefore, might take place along at least two lines; (1) a product once learned might be written at once, without the loss of time in calculation, and (2) there might be a gain of speed in writing the results upon the practice sheet. It is obvious that the larger amount of gain resulted from improvement in the first direction, though there were instances of a marked saving in time through the development of a more expeditious method of writing the results, as, for instance, that of writing the two-place products in the regular order of the tens' digit first, instead of writing the unit figure before the tens' figure. This change generally took place when the product had been learned so that the calculation of it was no longer necessary. Of the different practice groups, the 5th-grade class in the special room had the highest average per cent of accuracy at the beginning of the experiment, and retained it until the close. The special 6th-grade made no gain in this respect, but suffered a slight loss. This class, however, when measured by the single score of time divided by accuracy, shows by far the greatest improvement, owing to its remarkable increase in speed. It is worth noting that in this test, as in the great majority of the educational tests discussed in the preceding chapter, the average score (in time divided by accuracy) of the special 5th grade reaches that attained by the 6th-grade pupils of the control group, though considerably lower at the beginning. *Two weeks' drill, therefore, has brought this special 5th-grade group, which at the time of the experiment had done about six weeks of 6th-grade work, up to the level of a class which had been doing the regular 6th-grade work for seven months.*

By comparing the gains made in the practiced groups with those made by children of the same grades in the unpracticed room, the results of the drill are readily made apparent. It is interesting to note, in this connection, that the unpracticed room actually does show a respectable gain. This may be due to several factors. In the first place, learning occurred in connection with the first application of the test and some of the combinations learned were remembered. Again, familiarity with the method of the test had been acquired, which would result in a saving of time. In addition to these, the regular work of the schoolroom in arithmetic had afforded incidental practice in multiplication, and the two weeks of training might well have functioned in the results of the final test.

Practice and Individual Differences

A study of the individual learning curves obtained in this multiplication drill, as well as of the curves showing the daily room averages confirms the conclusion, laid down by so many investigators, that practice, so far from equalizing individual differences, tends to increase them. To the pupil with high initial ability, in the great majority of our cases, this drill has given opportunity to reach an even higher degree of superiority. Not much change of rank has taken place. In general, those who led at the initial test also led in the final. If the two grades of the special room are treated as one group, it will be seen that the highest three individuals in the initial test occupy their respective positions in the final test, with no change of rank at all. The correlation between pupils' ranks in the two tests, for the special room, figured by the "foot-rule" method is .63, which by the conversion table gives us a Pearson correlation of $r = .84$.[3]

Our results then, to repeat what has been said above, are in complete accord with those of other investigators who have found high initial ability no barrier to profit by training, and practice in any given performance more efficient in case of those with high initial ability in the desired performance, granted only that the high initial ability does not represent a close approach to the upper limit already obtained by previous practice. To quote from Wells:

> ". . . A superior performance at the beginning of special practice is not necessarily, or even probably, attained at the sacrifice of prospects for further improvement. A high initial efficiency may carry with it as much or more prospect of improvement under special practice than a low one. It was not because the favored individual had had more of the general experience enabling him to meet the experimental situation better, but because he possessed the native ability to profit more by such experience, general and special, past and future. Not practice, but *practiceability*, is responsible for the superior position of such an individual; and, in broader aspect, not education, but educability.[4]

[3] For process of calculating correlation by the "foot-rule" method, and for conversion table, see Whipple's *Manual*, Part I, pp. 42–44.

[4] Wells, F. L. The relation of practice to individual differences. *American Journal of Psychology*, 23:75–88.

Also see, Thorndike, E. L. The effect of practice in the case of a purely intellectual function. *American Journal of Psychology*, 18:374–384.

Donovan, M. E. and Thorndike, E. L. Improvement in a practice experiment under school conditions. *American Journal of Psychology*, 24:426–428.

For a complete treatment of the learning-curve, see Thorndike, E. L. *Educational Psychology*, Volume II, *The Psychology of Learning*; and for the effect of practice upon individual differences see Volume III of the same work, *Work and Fatigue and Individual Differences*.

CHAPTER VI

RESULTS OF THE MENTAL TESTS

In this chapter will be discussed the results of a few of the tests[1] which were given to the pupils of the special room, as well as to those in the control groups. The tests treated here are more general in their nature than those which were described in Chapter IV, and, being psychological rather than educational, they show primarily differences in native ability, rather than in ability which has been developed by training in some special line.

Logical Memory

Whipple's "*Marble Statue* test"[2] is a test for 'logical,' or 'substance' memory, or what is known as 'memory for ideas.' A simple version of the story of Pygmalion and Galatea is read to the subject, who has previously been warned to give close attention in order that he may be able to reproduce what he hears. The test is scored on the basis of the number of ideas satisfactorily reproduced, rather than upon an exact, verbatim reproduction of the passage as presented. The story is made up of 67 standard divisions, each one of which constitutes an 'idea.' The reproduction is scored by comparing it with the standard idea-divisions of the original passage. Table XXXIV shows the results of this test. Reproduction was begun immediately after the passage had been read, and the score is expressed as the number of ideas satisfactorily reproduced.

This test was given in the experimental room on October 26, and in the other rooms on January 24, or three months later. Notwithstanding this handicap in time, the superiority of the selected group is clearly evident. As was the case in the majority of the educational tests, the 5th-grade class of the special room, in median score, exceeds the total group of 6th-grade pupils.

[1] For a fuller account of the mental tests, see G. M. Whipple, *Classes for Gifted Children*, 1919.

[2] *Manual of Mental and Physical Tests*, Pt. II.

TABLE XXXIV

Marble Statue Test. Immediate Reproduction. Number of Ideas Reproduced

Score	Number of Pupils					
	Fifth Grade			Sixth Grade		
	Total	Control	Selected	Total	Control	Selected
17–18	.....	3	0	.....	1	0
19–20	.....	0	0	.....	1	0
21–22	.....	4	0	.....	3	0
23–24	.....	5	0	.....	6	0
25–26	.....	5	0	.....	2	0
27–28	.....	8	1	.....	8	0
29–30	.....	6	4	.....	4	1
31–32	.....	1	0	.....	9	2
33–34	.....	4	2	.....	7	2
35–36	.....	4	2	.....	7	0
37–38	.....	4	2	.....	2	1
39–40	.....	2	2	.....	6	3
41–42	.....	2	0	.....	1	4
43–44	.....	0	1	.....	0	1
45–46	.....	1	0	.....	2	0
47–48	.....	0	1	.....	0	0
49–50	.....	0	0	.....	0	0
51–52	.....	0	0	.....	1	1
Sum	.....	49	15	.....	60	15
Group:						
Median	30.30	28.75	35.50	33.10	31.50	40.30
Average	30.79	29.39	35.40	32.98	31.59	38.53
Range	17–48	17–42	27–48	18–51	18–51	30–51

Bonser's Reasoning Tests

In order to compare ability in certain forms of reasoning, more particularly selective judgment, Bonser's Tests III, V, and VI were used. Those parts of Test III which were given consist of two sets of ten sentences each, with a significant word omitted from each to be filled in by the pupil; and two sets of ten sentences in each of which are placed, one above the other, two significant words, one of which would give an erroneous meaning to the sentence and is to be crossed out by the pupil so as to make the sentence read correctly (Test III, Aa, Ab, Ba and Bb). Bonser says that this test involves recognition and selection on the basis of fitness to purpose as the dominant factor, and that the activity tested is that of accuracy and spontaneity in recognizing resemblances between the known of experience and the unknown of new situations. Test V, A and B, consists of two

series each of ten reasons why some given statement is true. Some of these reasons are correct, others irrelevant or incorrect, and the pupil is to select the correct ones. Test VI contains two sets, of three series each of definitions for a given thing or term (some correct, others incorrect or irrelevant) from among which the pupil is to select those that are correct. In giving these tests, as well as in scoring them, Bonser's directions were observed precisely.[3] The tests were given first in the special room, and the time-limit for each of the tests in the other rooms was fixed at the number of seconds which it took the first pupil in the special room to finish that test. The following table shows the amalgamated scores for all three of the tests, *i.e.*, the scores made by each pupil in the different tests, combined into a single score by adding.

TABLE XXXV

Bonser's Reasoning Tests; III, V, and VI. Combined Scores

Score	NUMBER OF PUPILS					
	Fifth Grade			Sixth Grade		
	Total	Control	Selected	Total	Control	Selected
1– 5	.....	1	0	.....	0	0
6–10	.....	2	0	.....	0	0
11–15	.....	5	0	.....	1	0
16–20	.....	6	0	.....	4	0
21–25	.....	2	0	.....	11	0
26–30	.....	7	1	.....	4	0
31–35	.....	4	3	.....	2	3
36–40	.....	4	3	.....	5	0
41–45	.....	3	2	.....	8	1
46–50	.....	2	1	.....	4	0
51–55	.....	3	2	.....	4	4
56–60	.....	2	0	.....	5	1
61–65	.....	2	1	.....	2	2
66–70	.....	1	1	.....	0	0
71–75	.....	0	0	.....	0	0
76–80	.....	0	1	.....	2	2
81–85	.....	0	0	.....	0	1
86–90	.....	0	0	.....	1	0
91–95	.....	1	0	.....	0	1
Sum	.....	45	15	.....	53	15
Group:						
Median	35.64	30.30	43.50	43.50	40.00	55.00
Average	36.64	33.46	46.17	40.28	35.02	58.86
Range	5–91	5–91	27–76.5	13–95	13–86	31.5–95

[3] Bonser, F. G. *The Reasoning Ability of Children of the Fourth, Fifth, and Sixth School Grades*. Teachers College, Columbia University Contributions to Education, No. 37, pp. 3–18.

These tests were given in the special room on the 5th, 6th, and 7th of December, and in the regular rooms a month later. According to the results, the pupils of the special room were distinctly superior to the others in selective judgment, and it is once more the case that the special 5th grade excelled the score of the whole 6th-grade group.

Equivalent Proverbs

Another of the tests used was the "Equivalent Proverbs Test." This test was given in three parts, each consisting of a series of well-known English proverbs and a series of African or Arabian proverbs,

TABLE XXXVI

Equivalent Proverbs Test. Combined Scores

Score	Number of Pupils					
	Fifth Grade			Sixth Grade		
	Total	Control	Selected	Total	Control	Selected
580–599	.....	0	0	.....	1	0
560–579	.....	0	0	.....	1	0
420–559	.....	0	0	.....	0	0
400–419	.....	1	0	.....	0	0
380–399	.....	1	0	.....	1	0
360–379	.....	0	0	.....	0	0
340–359	.....	3	0	.....	0	0
320–339	.....	0	0	.....	0	0
300–319	.....	0	0	.....	1	0
280–299	.....	2	0	.....	2	0
260–279	.....	0	0	.....	1	0
240–259	.....	3	0	.....	2	0
220–239	.....	2	0	.....	0	0
200–219	.....	3	0	.....	1	0
180–199	.....	5	1	.....	4	0
160–179	.....	1	1	.....	1	2
140–159	.....	5	3	.....	6	1
120–139	.....	7	3	.....	5	1
100–119	.....	2	2	.....	11	1
80– 99	.....	2	0	.....	8	0
60– 79	.....	8	2	.....	3	7
40– 59	.....	0	2	.....	3	3
20– 39	.....	0	0	.....	2	0
Sum	.....	45	14	.....	52	15
Group:						
Median	145.0	156.0	132.4	115.0	118.60	72.9
Average	163.4	177.8	117.0	135.6	148.75	90.0
Range	419–40.5	419–60	190.2-40.5	576–39.6	576–39.6	177–41.7

arranged in parallel columns. The task was to find for each English proverb the equivalent proverb in the other list. In some respects this test is similar to Bonser's reasoning tests, in that it may be said to test ability in seeing relationships in verbal expressions. Each of the three parts was given separately to all the rooms at practically the same time, and was scored by dividing the time in seconds required to finish it by the number of correct identifications. The three scores for each pupil in this manner were then added, to afford a single final score. Since each score by this method represents the time required for one correct solution, it will be remembered that the higher figures represent the lower scores.

Because of the wide range over which these scores are scattered, and the irregularity of their distribution, there is for each grade a considerable difference between the median and the average. Each of the special grades, however, shows marked superiority over its control group, and the difference seems somewhat greater in case of the 6th grade. In that grade, however, two individuals in the control group succeeded in making better scores than were made in the selected group.

Word-Building

Whipple's "Word-building Test"[4] might have been considered among the language tests discussed in Chapter IV, for successful performance in this test is conditioned to some extent upon size and readiness of vocabulary. In addition, Whipple says that "it is one that calls for ingenuity and active attention; it might fairly be said to demand that ability to combine isolated fragments into a whole, which Ebbinghaus has declared to be the essence of intelligence and for the measurement of which he devised his well-known 'completion method.' " This test is given in two parts, by means of two blanks, one of which calls for the combining of words from the letters *a, e, o, b, m, t;* the other from the letters *e, a, i, r, l, p*. The *aeobmt* blank is given first, followed by the *eairlp* blank, and five minutes is allowed for each. The score of the individual's performance is the sum of the legitimate words formed from the two lists. This test was given to the experimental room on October 24, and to the other rooms about three months later.

[4] *Manual*, Part II, pp. 274–283.

TABLE XXXVII

Word-Building Test. Combined Scores of Both Lists

Score	Number of Pupils: Fifth Grade: Total	Control	Selected	Sixth Grade: Total	Control	Selected
2– 3	.....	1	0	.....	0	0
4– 5	.....	1	0	.....	0	0
6– 7	.....	0	0	.....	0	0
8– 9	.....	0	1	.....	2	0
10–11	.....	1	1	.....	0	1
12–13	.....	7	0	.....	2	1
14–15	.....	5	1	.....	7	0
16–17	.....	6	2	.....	5	0
18–19	.....	4	0	.....	7	2
20–21	.....	6	1	.....	7	0
22–23	.....	5	2	.....	3	1
24–25	.....	4	1	.....	10	2
26–27	.....	2	3	.....	2	4
28–29	.....	1	2	.....	6	1
30–31	.....	1	0	.....	3	0
32–33	.....	3	0	.....	1	1
34–35	.....	0	0	.....	1	1
36–37	.....	0	0	.....	0	1
Sum	.....	47	14	.....	56	15
Group:						
Median	20.29	18.62	22.5	22.40	21.57	26.50
Average	19.50	19.06	21.0	22.14	21.27	24.70
Range	2–33	2–33	9–29	9–37	9–34	10–37

With this test, as with the preceding one, the special 6th-grade class shows a somewhat larger difference in its favor than does the special 5th-grade. If we take into account the difference in time, it seems fair to say that the special 5th grade shows a median and an average score practically equal to that of the whole 6th grade; especially so since the percentile curves of word-building published by Whipple show that, at the age of these pupils, the growth for three months in ability in this test, as measured by the median score, is approximately one word. When this correction is applied to the median and average scores of the control groups, the superiority of the selected group is more clearly revealed. It is true, however, that four individuals in the 5th-grade control group made a higher score than was made by any member of the special class in the same grade.

Summary

The results of the tests described in this chapter go to show that bright children excel ordinary ones in such things as logical memory and selective judgment, as well as in performance in the school subjects, as was shown in Chapter IV. In other words, the differences between the top tenth of the children in the middle grades and the rest of the children in those grades, are differences which to a great extent depend upon heredity, rather than upon training. The same thing is indicated by the results of the practice test discussed in the preceding chapter, as well as by those of a great number of other mental tests which were given throughout the year, but which it has not been thought necessary to discuss, inasmuch as a complete description of them has been published elsewhere. The evidence of all the tests strongly suggests that the intellectual differences between bright and mediocre children are of such an amount that they practically may be considered qualitative as well. At any rate the results of the tests indicate that gifted children have mental powers which are sufficiently different from those of average children to make it probable that the pedagogy of gifted children must include a special adaptation of method to their peculiar needs. The nature of this adaptation will be made the subject of the next chapter.

CHAPTER VII

METHODS OF TEACHING AS ADAPTED TO THE INSTRUCTION OF GIFTED CHILDREN

While we have a few accounts of the operation of special classes for gifted children, almost nothing has been said concerning the special pedagogy of such classes. It would seem that this phase of the work has so far received but little attention in comparison with that which has been given to plans for organization, suggestions for programs of study, and discussions of the special aims to be attained by segregating the brighter pupils. Very much more, too, has been written about the results which have been obtained in such rooms than about the methods by which those results were secured. This chapter will be devoted to a discussion of such modifications of teaching-method as seem advisable in the conduct of a special room, or class, for children of better than normal ability. Its conclusions are based upon the results of plans which were definitely tried out in the experimental room, observation of three other special rooms for superior children, conferences with a few teachers of such rooms, and correspondence with supervising officers and teachers having such rooms in charge.

Of the few studies of this particular problem which are available, one grew out of the work of the special room established in Cincinnati in 1910,[1] and was reported by Miss Flora Unrich, who had the room in her care. Miss Unrich says in her article that soon after entering upon her work with these pupils she took an inventory of their mental equipments and characteristics, their strengths and their weaknesses, and concluded that the qualities which she needed to implant in them were self-control, self-helpfulness (adaptability), concentration, and continuity. She attempted, then, to develop self-helpfulness by doing nothing for a child which he could do for himself; and to develop accuracy, thoroughness, and continuity by

[1] See Chapter II.

not allowing her pupils to do anything in a desultory way, or to leave anything unfinished. For training in concentration she gave them practice in doing work while recitations were going on. In consequence of this treatment, as she says, her pupils developed in power to concentrate, to select (form judgments), and to examine themselves, as well as in will to finish what they had once begun. In order that these pupils might have no opportunity to form habits of indolence, whenever any assigned task had proved too easy they were at once provided with additional material difficult enough to enlist a deeper interest and call out greater efforts. Of the 32 pupils who were enrolled in this room, 25 accomplished two years of work during the year it was in session. This gain, says Miss Unrich, was made possible "by avoiding all mechanical teaching, appealing to the reason and judgment of the pupils, reducing all drill to a minimum, studying carefully in advance the entire year's course, and selecting kindred facts and subjects. This made much correlation possible, and prevented dissipation and side-tracking of the pupils' energies, by presenting such material when it could be effectively assimilated." Other features which were stressed are free and independent expression, power of initiative, careful self-censorship, conscientious effort, confidence placed in the pupils and understood by them to be met in only one way, individualization of instruction, and adjustment of the work to individual needs.[2]

An interesting article by Dr. Martha Adler describes an attempt to adapt methods of instruction to bright pupils which was made in Public School 77, New York City. The premise underlying the experiment was that "pupils of advanced intelligence should not only make more rapid progress than those of younger mental age, but that methods of instruction should be adapted to mental maturity." Seventy 1st-grade boys, about to begin the second half of the 1st-grade work, were tested by Goddard's 1911 Revision of the Binet Scale. The 35 boys who tested highest were placed in Class A, or the advanced section; and the others were assigned to Class B, the regular section. In describing the work of these two sections, Dr. Adler says:

[2] Unrich, Flora. A year's work in a "superior" class. *Psychological Clinic*, 5: January, 1912, 245–250.

> "In each class progress was made at a rate commensurate with the abilities of the children. In Class A, particular supervision was given to the instruction in reading and in the writing of phonetic elements leading to spelling, the purpose being to replace, at an early stage, low-grade by high-grade habits. Audible lip-preparation of new reading-matter and pointing to the words with the fingers are usually permitted with young pupils. Silent reading, with eye-recognition of the words was substituted at an early stage. Rapid reading and thought-getting were secured by various devices, and a maturity in development was noted which is not customary with young pupils. The synthetic method of writing phonograms usually precedes the analytic resolution into the letter elements by a considerable period. In the present instance, it was possible to combine these methods at a much earlier time than is customary. In the work in arithmetic it was noted that a much shorter period was needed by the pupils for objective work, and it was not a difficult task for them to acquire the more advanced work."

In the same school, out of a class of eighty-nine 4th-grade boys were selected the 36 who made the best showing in a selected list of mental tests. These were placed in a special section and their teacher was told to advance at a rate commensurate with their abilities. Concerning the methods used in this advanced section, the author of the study says:

> "In the advanced section special effort was made to engender the higher habits of independent study; the selection of the main thought of a paragraph or page, the organization of minor details around larger topics, and the cultivation of initiative in the use of a textbook and other aids to study were particularly emphasized. Combining the work of the latter half of the fourth grade with that of the first half of the fifth was successfully done by the teacher."[3]

A teacher in one of the 'preparatory centers' of Baltimore in speaking of the methods used in her classes and in the school in general, says that one of the chief aims is that the pupils develop habits of promptness and concentration and a general ideal of self-reliance, and that concentrated attention for a short time makes for rapid progress. Certain specific helps are provided in teaching children how to study,

[3] Adler, Martha. Mental tests used as a basis for the classification of school children. *Jour. of Educ. Psych.*, 5: January, 1914, 22–28.

for example, study periods in school, even when not assigned by the schedule, that teachers may see which children lack power of concentration and give helpful suggestions to them. The pupils are encouraged to ask questions about their individual difficulties only after they have made a real effort to solve them, and spontaneous effort at accomplishment and comprehension is looked upon as much more valuable than what is done at the teacher's detailed direction.[4]

With this reference to the opinions expressed in educational literature as an introduction, we may undertake a more detailed consideration of the adaptation of method to the distinctive needs of supernormal children. So closely, however, is the question of method connected with that of the characteristics of the teacher that we are perhaps justified in delaying the main issue for a moment in order to make way for some consideration of the qualities which should be sought for in choosing a teacher for a special room of gifted children.

The Teacher

It is but expressing a truism to say that the most retarded pupils are those who are naturally brightest. Almost any teacher who is possessed of the requisite amount of patience can develop a dull pupil to a level relatively near the limit of his ability, but teachers who do not at times retard the brightest members of their classes are rare. Efficient teaching is absolutely necessary if the ablest pupils are to make full use of their powers. Again, any marked departure from the usual program is likely to fail unless the teacher or other authority who has it in charge is forceful and intelligent, and able to command the respect, not only of the pupils but also of the patronizing community in general; and under present conditions a special room for gifted children represents such a departure.

Efficiency in teaching depends upon broad scholarship, adequate preparation, and strong personality, all of which are of prime importance for the kind of work which we are considering. The teacher, in order to be successful in instructing very bright children, must be well-grounded in educational theory and professional knowledge. She must know how to adapt her instruction to the varying needs of

[4] Patterson, M. Rose. A preparatory center in Baltimore; William Rhinehart School No. 52. *Atlantic Educ. Jour.*, 12: January, 1917, 234–238.

her pupils. She must be able to work out a definite lesson plan, in order that both she and the pupils may have an exact understanding of just what is to be done, and waste no time in aimless floundering. She must have the ability to discern relative values and to lift important topics into prominence from the mass of details. No matter how much experience she may have had, she must still preserve the experimental attitude and be capable of noticing wherein her methods must differ from those which she would use under ordinary circumstances; and must remember that many of the conventional ideas of method and technique that obtain in ordinary teaching do not apply to gifted children in a special room, especially since their initiative is so marked. In a word, she must have so profited by professional training as to make it possible for her to recognize the special pedagogical and psychological problems connected with her work.

The wealth of associations which bright children possess, and their quickness in forming others, are features which often make them a source of real difficulty in ordinary schoolrooms and for ordinary teachers. The teacher in the special room for such children, if she is to command the respect of her pupils or cause them to work up to the limit of their powers, must have had a broad general training and a wide range of information. So far as the children in our experimental room were concerned, they did a great deal of outside reading, much of which was more mature in character than the reading of ordinary children of the same age. This resulted in the asking of a great many questions, which covered a broad field. Of course, it is hardly possible that even the best-informed teacher would be able to dispose of all the questions brought to her by a score of very bright children, but she should be able to answer a reasonable number of them and should know where to look for information to answer most of the remainder.

No less important is the matter of personality. To choose a teacher for capable children on the basis of scholarship alone, placing them in charge of a normal-school or college graduate of weak personality and slender teaching resources is to invite disaster. In order to develop the powers of gifted children to their fullest capacity, the teacher of those children must possess an individuality strong enough to challenge those powers. Energy and enthusiasm on the part of the teacher are needed in any schoolroom, but nowhere are

they so much needed as in the education of bright children. A lack of them makes the development of self-reliance, industry, and initiative among the pupils almost an impossibility.

The qualities which have been discussed above are, it must be admitted, precisely those qualities which make for good teaching in any room, special or regular. So far as these factors go, none of them is the exclusive property of the teacher of capable pupils. The point that is made here, however, is that gifted children require an especially strong teacher—one who ranks high in scholarship, preparation, and personality—and that, whereas a teacher of lower rank in any of these particulars might do very well in an ordinary room, she would not be capable of securing adequate results in a room such as that upon which this study is based.

Method

What is true of the teacher is also true of method of the special room. None of the methods which are to be described could be said at all times to be out of place in an ordinary schoolroom; but it is true that some methods, more than others, must characterize the instruction of supernormal children, while other methods must receive more emphasis than would be placed upon them in teaching ordinary children in regular rooms.

The most common modification of method which was reported in my correspondence with supervising officers and teachers of special rooms for gifted children, is *a reduction in the amount of drill.* To the question on this point answers were secured from 20 persons actually engaged in supervising, or giving instruction to, such rooms or classes. In all but four instances there was reported a marked decrease in the amount and relative importance of drill-work, as compared with ordinary schoolroom procedure. Two of these four exceptions came from special teachers of arithmetic, one from a teacher of grammar, and one from a room-teacher giving instruction in all the common branches. Eleven teachers reported a lessening of drill in all subjects; history received specific mention three times in this connection; geography, spelling, and arithmetic were each mentioned twice; bookkeeping once, and "memory-work" once. The most common estimate of the amount of this decrease was 50 per cent. A few put it at one third or one fourth, but the typical answer was "50 per cent in all subjects." One departmental teacher of arithmetic,

who teaches both a bright group and an average group, reported that for some time she had been making a careful study of this particular question, and had been keeping a record of the drill-time in each of the two groups. As a result, she found that the time spent in drill with the bright class was just 48 per cent of that in the ordinary class.

A priori, since gifted children grasp principles and concepts more quickly than ordinary children do, not so much drill is necessary in their education as in that of children of ordinary ability. While gifted children must have a certain amount of drill in the skill subjects, care must be taken that they are not required to drudge through long lists of grammatical or arithmetical exercises in order to 'fasten' principles which are already well understood and known by them. The very fact that the bright child is quicker to see things than other children are, goes to indicate that he needs less drill than they do. Experimental evidence is at hand to show that practice increases differences in performance (see Chapter V), and it is a corollary to this that practice is more efficient in the case of able children, and hence less of it is needed to attain any set standard.

One of the teachers who had charge of a 5th-grade class from which a number of the brightest pupils had been selected for the experimental room, and who kept the same class as a 6th grade the next year, remarked to the author that the removal of these pupils had made much more drill necessary in her room. Similar opinions were expressed by the other 5th-grade and 6th-grade teachers whose best pupils had been transferred to the special room. Obviously this indicates that under ordinary circumstances teachers are misled by the performance of bright pupils and give less drill than ordinary children need; or, if they spend time for the drill which is needed by average and dull children they waste the bright pupils' time. All in all, the evidence goes to show that the practice of greatly reducing the amount of drill, which is shown above to obtain quite generally in the instruction of gifted children, is readily justified.

Formal review is only another form of drill, and what has been said in the discussion of drill will apply to review also. In the ordinary schoolroom it quite often happens that the teacher will resort to a period of drill, or to a formal review, simply for the purpose of filling up time which otherwise she would not know what to do with. The

author's experience in observing, and teaching in, the special room convinced him that for such children the most efficient kind of drill is a short and very intensive one, and that there should be rather frequent reviews of that character, instead of less frequent, more formal, and longer ones. In such a room neither drill nor review should be given unless at a suitable time, for a clearly understood reason, and after careful planning, and never for the purpose of simply using up time; and as less drill is necessary for gifted children, so also is less review needful.

Aside from decreasing the amount of review and drill, the most frequently reported change in method is a *lessened amount of explanation*, including lessened attention to detail in the development of a new topic. This was mentioned as a leading feature in the adaptation of method by 12 out of 21 persons from whom information was obtained. The following is a typical statement: "Explanation doesn't have to be entered into so minutely, or have to be repeated as with ordinary pupils. They grasped so much more quickly that time was saved thereby." Said another: "They get it at one 'exposure.'" One teacher estimated that bright pupils require from a third to a half the amount of explanation necessary in teaching ordinary ones, and another expressed the figure as 55 per cent.

Since one of the chief purposes in the establishment of special rooms for gifted children is that they be given the opportunity to work as diligently as ordinary children have to work to get their tasks accomplished, it will be readily seen that too much explanation on the part of the teacher would defeat one of the chief aims of such a room. Again, if the program of the special room involves a saving in time, economy in teaching must be featured, as well as economy in learning. Any time, then, which is spent by the teacher in explaining what is already perfectly known by the pupils or in considering details which are of no importance or which could easily be worked out by the pupils themselves, contributes to the defeat of another important aim.

A common form of over-explanation consists in giving *too much attention to illustration*. The danger of this, even in an ordinary room, has been so well pointed out by Professor Adams that I cannot forbear quoting the following paragraph from one of his works,[5] especially since it so well applies to the teaching of bright children:

[5] Adams, J. *Exposition and Illustration in Teaching*, p. 395.

> ". . . There is the danger of over-illustration. Some teachers seem to regard it as an established principle that every point that arises must be illustrated, whether it offers any difficulty or not. What is perfectly clear already needs no illustration as a matter of exposition. A straightforward statement of fact dealing with elements that come well within the pupil's range should not be illustrated, so long as the teacher's purpose at the time is only to get the pupil to understand. Indeed, it is possible that by illustrating what requires no illustration the teacher may cause needless difficulties to arise, especially in the minds of the more eager and attentive pupils. Accustomed to attach a meaning to all that the teacher says, such pupils are apt to think that since he makes so much of the point he is laboring, there must be something in it which they do not yet perceive, and they may grope about for a meaning that is not there."

A mistake which is very likely to be made by the teacher who is placed in charge of a room of gifted pupils for the first time, is to forget *the relative importance of details.* This often occurs because the teacher, finding her pupils able to assimilate a great variety of facts in a comparatively short space of time and seeing great possibilities in the direction of thoroughness, is carried away by that as an ideal, and in her enthusiasm expects her pupils to master every detail which she places before them or which is found in their textbooks, without regard to the relative value of those details. This results in a waste of time and a dissipation of energy. Successful teaching in a special room for bright children must take into account the relative importance of the different topics and make a proportionate division of time. Instead of an encyclopedic treatment of the content subjects, there should be an intensive study of the main topics, supported by many of the details as secondary. In mastering the main topics, bright students will acquire most of the important details spontaneously, but the teacher must be able to distinguish between first-rate and tenth-rate facts in making her assignments and drawing up her lesson-plans.

Another prominent feature of method as adapted to gifted children, is provision for the *development of initiative, self-reliance, and free expression.* These characteristics, of course, have their place in the ordinary schoolroom, but it is in a room of the type which we are describing that they are capable of their fullest development and must

receive the greatest emphasis. Many of the teachers with whom I have corresponded have mentioned the use of these traits, and some have furnished me with concrete examples of how they have been enabled to develop a spirit of self-reliance in their pupils and to make it contribute to the work of the school. Thus one says: "The children are required to get information for themselves through silent reading more than ordinary children of this grade (4b), and emphasis is placed upon their ability to discuss what they have read." Another says: "The children take more initiative. They use the material we have at hand more freely." Another: "Far less explaining is necessary, for these children are able to help themselves and they often work out new subjects in grammar and arithmetic. This is the most successful side of my work."

The following paragraph is quoted from the letter of a teacher of a special room for bright children in the Bigelow School, of Boston.

> "In presenting a subject I have been able to dispense with detailed explanations which I have found necessary in regular grade work. The children are quick to grasp a new idea, and to apply previously taught principles. Also the children do more, and I less, of the work than is possible in a regular grade. For instance, in the matter of history—after the children have been trained how to study, I assign a subject. The child studies the subject as a whole, selects what to him are the essentials, and presents them to the class. He must have reasons for his selection, and knowledge enough to answer any question. Dependence on self is the thing we strive to cultivate."[6]

One of the best examples of the development of initiative on the part of school children that has come under the author's immediate observation was in the "opportunity class" under the care of Miss Jessie B. Marshall, of the Louisville, Kentucky, Normal School. This class, which has been described in an earlier part of this study,[7] was composed of very bright children from the fourth grade. In a geography lesson upon the hard-wood lumber industry of Kentucky, one of the boys took a pointer, went to the map, and gave a very well-planned and coherent discussion of the hard-wood timber region of Kentucky, the different varieties of trees found there, and the

[6] Letter from Miss S. H. Lynch, Bigelow School, Boston.

[7] See Chapter II.

methods of putting the lumber upon the market. Opportunity was given to the class to ask him questions, most of which were promptly answered. At the conclusion of his discussion, he took charge of the class, asking them questions connected with the day's lesson, so that to all intents and purposes he taught that lesson to his fellow-pupils. The same method was used in an arithmetic class, where another boy, who had been previously appointed for that purpose, dictated original problems to the class, oversaw their solution, corrected the mistakes, and gave help to such members of the class as seemed to be in need of it.

These three things—lessened drill, lessened explanation, and augmented initiative—according to the reports which I have received, are the most prominent features of method as adapted to the peculiar situation of a special room for gifted children. In addition to these there are at least two other important principles which have been mentioned by a few teachers, and which have been made use of in our own experimental room.

The first of these, for lack of a better name, I shall call the "*principle of application*," meaning by that the endeavor to encourage the pupils in all possible ways to make use of the knowledge already acquired by them, in the acquisition of more knowledge. In my experience in teaching these children, I found the step of 'application' following the development of a principle, a very easy one for them to make, and they were encouraged to apply each principle to as wide a field as possible. When it could be done, arithmetical principles were taught as closely as possible in connection with their applications. To illustrate, in the textbook which was used in arithmetic in the 5th grade, cancellation was treated as a separate topic, having a section devoted to an explanation of the principle involved and a list of problems for drill. But before this section of the textbook had been reached, opportunity was seen for the introduction of cancellation, and it was explained to the class, somewhat casually at first, as a method of saving time in connection with a certain problem. This process was repeated, until after the class had seen the method used a few times they were perfectly able to use it for themselves, and consequently it was possible to omit almost all of the section of the textbook which was devoted to that subject. To make sure that the children are making use of the knowledge which they have, the teacher should

allow the pupils to tell what they know about the subject under discussion, even if they go into details which are in advance of the lesson for the day. The conventional treatment of the child who "goes ahead of the lesson" in his recitation is to restrain him. It has been our experience, however, that much advantage is secured by allowing children to anticipate advance matter in this way. It prevents waste of time later in teaching the children what they already know, and it gives the teacher opportunity to discover what connections already formed in the child's mind are available as means of approach to new material.

Another feature of the instruction in the experimental room has been the conscious effort to *teach as much as possible by principles* instead of by more or less detached facts. For instance, the 5th-grade textbook in geography treated the difference in rainfall on the sides of the Coast Ranges of the western United States by simply mentioning the fact, without explaining the principle of the loss of moisture during the passage of clouds from the sea over a mountain range. This principle was, however, developed by the class, so that a few weeks later, when the geography of the Amazon valley was being studied, the class was able to deduce the direction of the prevailing winds from the text's simple statement of the difference in rainfall on the sides of the Andes. Similar methods were used in physiology, and, indeed, wherever possible.

In addition to what has already been said concerning special adaptations of method in the experimental room, a few other features may be mentioned. There was a persistent attempt to take into account the relative importance of the different topics and portions of subject matter and to make a corresponding distribution of time and emphasis among them. Perhaps the greatest saving of time has been effected by the quickness with which the children learn, which has made it possible to dispense with the long explanations that would otherwise be necessary. There was a persistent attempt, therefore, to get at the root of the matter as quickly as possible, without wasting any time in needless explanation. When it was found, as it often was, that the pupils were already perfectly familiar with a principle for whose development the course of study or the textbook provided an extended amount of formal drill, the drill was correspondingly

shortened. Again, it was often discovered that the children already knew enough about an advance topic to render unnecessary any detailed development of it.

As nearly as we could estimate, the amount of drill was by these methods lessened about 50 per cent in all subjects except formal grammar, where the reduction was about 30 per cent. In place of having all the pupils solve all the problems given to illustrate each topic in arithmetic, approximately a third of them were omitted. Much use was made of the practice of having one pupil work an example at the board where it would command the concentrated attention of the class. Many original problems were set and solved by the pupils; and very often, in order to provide problems difficult enough to call forth real effort, they were assigned from textbooks of a grade higher than the one in use. In particular more "thought problems" were given.

In geography and history, the reviews by questions furnished in the book were frequently replaced by reports given by members of the class upon supplementary readings covering the same ground. The principle of application was also often made use of in review in different subjects, and was so used whenever it seemed advisable, whether at the beginning or at the close of a lesson or during its development. In reviewing history in the 6th grade, each child gave a report worked out by himself, on two separate periods. These reports were well-developed; the manner of presenting the facts were in most cases very good, and original comments and comparisons were made.

The teacher found it possible to correlate lessons to a much greater degree than in an ordinary room, and it was also possible to do more supplementary work. Outlines of lessons were frequently worked out by the pupils. Sometimes this was done in advance by pupils appointed for the purpose, and their outlines then used before the class as the basis of the assignment. Much less testing was necessary in developing a lesson with these children than would have been required with ordinary ones, and our selected pupils were easily led to develop topics by wholes. Since it was possible for the teacher to find many more points of contact with the interests of these children, it was much easier for her to make the work concrete and real. She did not find it nearly so difficult to stimulate their interest as to keep it within due bounds.

Discipline

Closely connected with methods of teaching is *the question of discipline.* I have answers from twelve teachers of bright children to the question: "Does the instruction of bright children present any peculiar problems of discipline?" The practically unanimous testimony of these teachers is to the effect that, far from presenting any problem, discipline in the gifted room need hardly be considered. One teacher says that bright children must be kept very busy, and are frequently inattentive because they already know what is being explained. Another says that the only difficulty in this respect is a tendency to interrupt one another in discussion, and that this is probably due to their interest in the subject. Some typical answers are quoted: "It is the most orderly school I have ever taught." "We have no trouble with regularity of attendance, punctuality, or discipline. We try very hard to make our class an inspiration to the school." "I never had better order and it is the same whether I am in or out of the room. I feel sure better discipline in all schools could be secured if pupils were divided according to their ability." Our experience with our own group of bright children was quite in line with this testimony, for at no time did the question of discipline need any consideration. Although one of the 6th-grade boys had been a source of trouble during the previous year, after he was transferred to the special room his conduct was uniformly good. While this change may have been due to other causes, rather than to his being placed in the special room, the fact is not without significance. An exactly similar case was reported to me from the class in the Louisville Normal School, and I am very strongly led to believe that the conduct in school of a boy who is both bright and mischievous would be greatly improved by putting him into a special room where he might have opportunity to exercise his powers and to form habits of industry and attention.

Because it is argued by some that the segregation of bright children in special rooms tends to develop priggishness, clannishness, egotism, and vanity, and because the possession of such undesirable characteristics by bright children would greatly modify the teacher's method of dealing with them, information was sought as to whether bright children possess these traits in any inordinate degree, and whether there is any noticeable tendency toward their development among those who have been placed in special rooms. Opinions upon

these points were secured from ten teachers of these rooms. Eight of them report that their pupils are not snobbish and priggish, and that segregation has not developed undemocratic attitudes or sentiments. Two say that in their classes the children do exhibit these egotistic traits; one that she notices them "in a marked degree." Both these teachers taught the same group of children, however, one as a special teacher of history, the other of geography, in a school under departmental organization. An interesting paragraph from one of the letters in answer to this question is quoted:

> "I feel sure that egotism and priggishness are not developed, but only a proper amount of personal pride to do well. They are just ordinary, healthy children, and are just like normal children, with perhaps the exception of their fondness for reading. I notice in the playground they enjoy each other's company, but they are not clannish about it."[8]

Terman secured extensive information concerning 31 very bright children from their teachers. Twenty-two of these children were reported as not spoiled or vain, five as spoiled, and two as somewhat spoiled. No statement was made about the remaining two. As a result of his inquiry, Terman says:

> "According to testimony of their teachers; such children are fully as likely to be healthy as average children; their ability is far more often general than special; they are studious above the average; really serious moral faults are not common among them; they are nearly always socially adaptable; are sought often as playmates and companions; they are leaders far oftener than other children; and notwithstanding their many really superior qualities, they are seldom vain or spoiled."[9]

So far as the pupils in our room at Urbana were concerned, in general they presented the appearance of ordinary children and had the same social characteristics, so that the atmosphere of the room was entirely normal. One or two mild cases of egotism were noted, but these could be explained by conditions at home and had been developed before the children entered the experimental room. So far as our

[8] Letter from Miss Helen M. Richardson, George Putnam School, Boston.

[9] Terman, L. M. Mental hygiene of exceptional children, *Pedagogical Seminary*, 22:529–537.

experience goes, it agrees with the burden of evidence that bright children are not made vain or conceited by placing them in a room organized especially to meet their peculiar needs. It is perfectly legitimate for able children to feel an honest pride in their achievements, and there is actually *less* chance for them to acquire a feeling of superiority in a room in which they are thrown into competition with their equals, than in an ordinary room where they stand out as clearly superior to their schoolmates.

Summary

In this chapter we have examined the distinctive features of that special method of instruction to which gifted pupils are entitled, on the basis of the results of the mental and educational tests which have previously been described.

It has been shown that for a special room for bright children is demanded an exceptionally able teacher—one who possesses broad scholarship, adequate professional preparation, and a strong and commanding personality.

According to the testimony of those who are engaged in the actual work of instruction in such rooms, the chief modifications of method which are being made use of in practice are the lessening of drill, the lessening in amount and detail of explanation, and greater provision for initiative on the part of the pupils. Other important features are the provision of opportunities for the pupils to make use of the knowledge which they have already gained, and the emphasizing of broad, underlying principles rather than more or less unrelated facts. The difference in importance of the various topics and portions of subject matter demands a corresponding difference in amount of time devoted to them and in emphasis placed upon them.

There are no peculiar problems of discipline connected with the administration of a special room for gifted children, nor do the pupils of such rooms exhibit any inordinate amount of clannishness, priggishness, vanity, or egotism.

CHAPTER VIII

GENERAL SUMMARY AND RECOMMENDATIONS

The experimental part of this study has demonstrated that children representing the top tenth of the school population of the middle grades, on a proper basis of selection, are able to accomplish two years of the ordinary school work of those grades in one year, under a mediocre teacher and with average conditions of supervision and equipment, without any undue strain or any depreciation in the quality of their work when measured by the standard educational scales and tests as well as by the methods ordinarily used in the school. It has also been shown that gifted children excel in regularity of attendance, and that their segregation in a special room practically eliminates the problem of discipline and does not tend to develop in them egotism, vanity, clannishness, or priggishness. The results of the practice test described in the text confirm the opinion of previous investigators that practice, so far from decreasing individual differences, tends, on the contrary, to increase them. Tests in the fundamental subjects of the school course have quite uniformly shown that the children in the experimental room in the Leal School, taken as a group, have an ability equal to that of ordinary children a year older than they, and the same advancement was shown in the results of the mental tests. All the evidence at hand points to the fact that the mental differences between superior and average children are of such a nature that in their instruction a special adaptation of method is necessary, the leading features of which have just been indicated.

In summarizing the more specific details of our study, it is desirable to offer certain definite suggestions concerning the organization and conduct of special rooms for gifted children. These recommendations are offered upon the basis of the author's observation of the work of the experimental room throughout the year, upon the results of the educational and psychological tests which were applied by the

other investigators, and upon present practice in rooms of the same kind as ascertained by correspondence with teachers and school officials in charge of them.

Recommendations

1. *The enrollment of a special room for gifted pupils should represent a selection of approximately the top ten per cent of the ordinary school population in the grades which are to be represented.*

To put this statement into terms of the intelligence quotient; enrollment in the special room should be limited to children who possess an intelligence quotient of at least 115. In practice this would mean the segregation of approximately the top tenth.

2. *Health should be an important factor in the selection of the pupils.*

While, as has been shown, the pupils of our own room were under no undue strain and suffered no impairment of health, it may readily be seen that the purposes for which a special room is organized, and the methods by which those purposes are attained, are such as to render it inadvisable for highly nervous or sickly children to be included in its membership. This consideration was, of course, taken into account by those who selected our pupils, so that the children in the experimental room represented at least average conditions of health and physique.

3. *The method of selecting gifted pupils should be by mental tests, not by teachers' estimates of the pupils' ability or estimates by school administrators from school marks.*

An examination of the tables of results of the mental tests which have been described in Chapter VI will show that a few individuals consistently made low scores. These same individuals made low scores in the educational tests, and, likewise, if the selection had been made on the basis of the possession of an intelligence quotient of at least 115, instead of on the opinion of the school authorities, they are just the ones that would have not been admitted to the special class. It is the presence of these pupils that in large part accounts for the wide range of scores that our selected group shows in the various tables. It often happens that a certain superficial glibness passes for intelligence to such an extent that a teacher is readily deceived, or that a good memory conceals the lack of ability to reason. These, or other, factors may creep in to warp a teacher's judgment of the abilities of

any particular pupil, with the result that when the selection is made for a special class on the basis of a teacher's opinion, whether expressed in class marks or otherwise, it may readily happen, as it did in this instance, that some pupils are selected who, although they have succeeded in obtaining high marks in their school work when proceeding at the usual rate, are able only with difficulty to keep up with the natural pace of those who are really mentally fit for segregation as superior pupils. Mental tests, on the other hand, do furnish an impersonal and scientific method of selection, which takes into account only intellectual ability.[1]

4. *The teacher of a special room for gifted children must possess a large fund of general information.*

Broad general information is necessary in order to meet with the wide range of questions which are the result of the wealth of associations which bright children possess and the extended field of their interests, as well as to make use of points of contact which would not be available in the instruction of ordinary children and which obviously ought to be capitalized.

5. *The teacher must have had adequate foundation in the theory and practice of education.*

This is essential in order that economy in teaching and in learning be brought about through definite plans of work, and through the ability on the part of the teacher to understand and carry out those special adaptations of method which are suited to the education of gifted children.

6. *The teacher must be characterized by energy, enthusiasm, and an inspiring personality.*

In order to develop in these children the necessary habits of self-reliance, industry, and initiative, the teacher, on her part, must exhibit energy and enthusiasm, and must have a personality such as to inspire her pupils to put forth their best efforts and to challenge them to summon all their powers.

7. *The teacher in charge of a special room should be carried along with it in its advancement, and should remain with it as long as it retains its organization.*

[1] Professor Whipple has recently placed on the market a special pamphlet of group tests for the selection of gifted children, particularly in the 4th, 5th and 6th grades.

This arrangement makes for economy of time, in that it becomes unnecessary for the pupils, at the beginning of each year, to adjust themselves to the characteristics, methods, and requirements of a new teacher; nor is any time lost by the teacher in making the acquaintance of a new set of pupils. It also permits greater freedom in the organization of subject matter from year to year in the course.

8. *The special room should be equipped with movable desks, and should be well supplied with maps, charts, globes, pictures, and other aids to study.*

The use of movable desks gives much more freedom of movement to the pupils, and makes possible much greater variety in conducting the exercises of the school. If the pupils have access to books for supplementary reading, maps, globes, and other illustrative material, their study will be more independent, and they will have opportunity to learn how to work for themselves.

9. *In the special room for gifted children, drill should be decreased by about 50 per cent.*

Correspondence with teachers shows this to be a prevalent practice in rooms of this kind, and corroborative evidence has been furnished by the work of the experimental room. Results of learning tests indicate that practice is more efficient in the case of those who already possess high initial ability.

10. *Likewise, explanation should be reduced about 50 per cent in amount, and needs to be given in much less detail than to ordinary pupils.*

This is also the common practice in special rooms for gifted pupils. It is justified by the quickness with which the children learn and by their greater ability in perceiving relationships.

11. *Emphasis should be placed upon the development of the pupils' initiative.*

A prominent feature in the education of bright children is the increase of opportunity for the exercise of initiative on their part, with a consequent insistence upon self-reliance and free expression.

12. *Much use should be made of the 'principle of application.'*

In carrying out this principle, pupils must be encouraged in all possible ways to make immediate and practical application of what they have learned, in the acquisition of new knowledge and in the

other activities of the schoolroom. In particular, the teacher may often very advantageously make use of this principle in provision for review.

13. *Instruction should be as much as possible by broad, underlying principles, rather than by detached facts.*

This is an important principle in all teaching, but it can be realized to a much greater extent with bright children than with ordinary ones, and consequently needs to receive greater emphasis in their instruction.

14. *An important feature of the teacher's method is the development of a proper perspective of the material of instruction.*

This implies the ability to estimate the relative importance of the different topics and pieces of subject matter in order to make a proper distribution of time and energy among them and to insure that the more important topics receive the greater attention.

15. *The teacher of the special room for bright children need pay but little attention to discipline, beyond seeing to it that the pupils have work enough to keep them busy.*

The testimony of those who are engaged in giving instruction to special groups of bright children is practically unanimous to the effect that no disciplinary troubles are encountered. While bright children sometimes cause trouble in ordinary rooms, because of the lack of employment, when they are placed in a room where they have plenty of work to occupy their attention, and where they must exert themselves to keep up with their fellows, their idleness gives place to industry, and they cease to give any trouble on the score of conduct. The only recommendation that needs to be made upon this point, then, is that the teacher see to it that the pupils have work enough to occupy their time.

16. *If any of the pupils in the special room seem to be developing egotistic tendencies, the teacher should apply the 'social check.'*

Contrary to the impression entertained by some, segregation of superior children does not inevitably develop in them undemocratic ideas and attitudes. Quite the opposite, for in fact there is *more* opportunity for the development of the feeling of superiority on the part of the bright child in the regular room than in the special room. Under ordinary conditions, the bright child stands out conspicuously above his fellows, his superiority is acknowledged by them, often to

the point of resentment, and he is keenly aware of it. When a question has gone round the rest of the class without receiving an answer, the teacher turns to him with an air of finality and relief. Such opportunity for display does not come to the child in the special room, for here he is among real competitors, and in place of being always in the lead he must often exert himself to keep up with the rest. Of course, it would not be out of place for a teacher of a special room, as well as any other teacher, to keep close watch for the beginnings of vanity and egotism in order that she may promptly check them. This can often be done by comparing the work of the child who needs to be thus corrected with that of some other pupil of superior, or at least equal, ability in that particular line. It is actually easier for a teacher to hold such tendencies in check in a room where the pupils are of about equal ability than in a room where the bright children are conspicuous by their superiority over their classmates.

17. *Corresponding to the special adaptations of method, there should be a readjustment of emphasis in subject matter.*

Modification of methods of instruction must perforce bring about modification in subject matter. Corresponding to the lessened amount of drill, there will be a lessening in the number of problems and exercises in the formal subjects. Less attention should be given to details of secondary importance, and more attention to necessary principles. Much of the purely explanatory matter in the textbooks may be passed over lightly or even omitted. It was found, in our experimental room, that the children often knew much of the matter ahead of them in the course of study, and this made it possible for that material to be passed over rapidly. Especially did this happen when a new volume in a series of textbooks in the same subject was taken up. For instance, the advanced textbook in geography, which the special 6th grade began to study at about the middle of the year, began with a review of the definitions and principles which the pupils had learned in their study of the intermediate book. Since it was found that the children were already perfectly familiar with practically all this material, this portion of the book was used only for a rapid review, instead of being made the subject of definite and extended assignments, as would have been the case if the matter had been entirely new. Exactly the same thing took place in 5th-grade arithmetic and 6th-grade language.

18. *The teacher of a special room for gifted children should be allowed wide latitude in modifying the course of study to fit the purpose of the room and the needs of the pupils.*

The author's work with the experimental room during the year thoroughly convinced him that a great deal of freedom should be allowed the teacher of a gifted room in following the conventional course of study. The investigators all felt that from the standpoint of the experiment, a considerable amount of time was lost in doing work which could be justified only on the ground of preparation for the somewhat rigid requirements of a conservative school system. The fact that we were not allowed to alter the sequence of any of the branches of subject matter seriously interfered with our efforts to condense the regular course of study for the two years into an economical and efficient one-year course. If a teacher of the type which has been recommended is once secured, she should be left in comparative freedom to select what she considers the essential parts of the course of study, and to present them in the order which is best adapted to the needs of her class. The time saved by these methods would afford opportunity to add a considerable quantity of outside material of a cultural nature, much of which might well be supplied by the pupils themselves. This added material might include, among many others, such things as extended supplementary reading of standard literature mainly for appreciation, dramatization, pageantry free discussion of the important topics in the news of the day, the collection of newspaper clippings correlating with the work in civics and hygiene, the illustration of history and geography with such relics, costumes, utensils, etc., as are available or can be procured, especially those which the pupils are able to bring, enrichment of the work in history by some consideration of industrial history, study of local city and state industries in connection with the work in geography, and so on through a long list. In some cases it might be possible to take up the study of a foreign language, as was done in the "opportunity class" in the Louisville Normal School, where 4th-grade children were given daily lessons in German, wholly by the conversational method.

Special rooms for gifted children are of two general types. One type, which is the more common, contemplates a saving of time by providing for the more rapid progress of the pupils. The other makes

no provision for the saving of time, but makes use of a course of study different from the ordinary one in that it either (*a*) contains more of the same kind of material, or (*b*) includes different material, which is usually of a more cultural nature. Of the second type, the latter arrangement is by far the better. It is subject to one danger, however, in that in the attempt to add cultural material, the course may be so diluted as to defeat one of the most important purposes of such rooms, namely, the provision of opportunity for gifted children to learn what hard mental work is. This danger, however, is not inherent in the scheme and may very easily be avoided.

Although most of the special rooms for gifted children now in operation have a course of study so arranged as to make it possible for the pupils to do three years' work in two, this study has shown that bright children of the 5th and 6th grades can do two years' work in one, and the same gain in time has been accomplished in one or two other rooms of the kind. By lessening the amount of drill, decreasing the amount of explanation, and, on the side of subject matter, omitting or passing rapidly over what is already known or of relative unimportance, enough time can be saved so that all of the essential topics of the two years' work can be mastered in one. There will be time enough left, in addition, to make possible the introduction of a considerable amount of cultural material of the kind mentioned above, by which the course will be enriched and made to connect more completely with the lives of the individual pupils.

CHAPTER IX

BIBLIOGRAPHY ON THE PSYCHOLOGY AND PEDAGOGY OF GIFTED CHILDREN

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